A Joint Professional Bulletin for US Field & Air Defense Artillerymen

Fires

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Fires

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Headquarters, Department of the Army • PB644-07-3

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PURPOSE: Founded in 2007, ***Fires*** serves as a forum for the professional discussions of US Army and Marine Field Artillery (FA) and Army Air Defense Artillery (ADA) professionals, both active and Reserve Component (RC); disseminates professional knowledge about the FA's and ADA's progress, developments and best use in campaigns; cultivates a common understanding of the power, limitations and application of joint fires, both lethal and nonlethal; fosters joint fires interdependency among the armed services; and promotes the understanding of and interoperability between the FA's and ADA's active and RC units—all of which contribute to the good of the FA and ADA, Army, joint and combined forces, and our nation.

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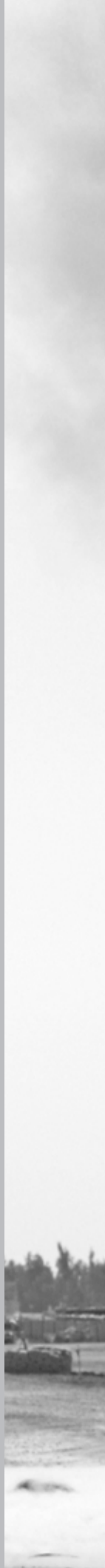


State of the Field Artillery 2007

Red Pride:

Anticipate—Integrate—Dominate

By Major General Peter M. Vangjel
Chief of Field Artillery

During the past year, the Field Artillery (FA) contributed significantly to the War on Terrorism (WOT), demonstrating agility and adaptability while executing Army-directed standard and nonstandard missions. Artillerymen transformed our Branch in the field, developing new adaptive and innovative capabilities and training. We share those techniques and lessons learned through every means we have at the Fires Center of Excellence (CoE), Fort Sill, Oklahoma, where we also are transforming how we do business, refocusing on our "customers" and rapidly responding to our Redlegs' needs. In addition, Fort Sill is preparing for the Base Realignment and Closure (BRAC)-directed move of the Air Defense Artillery (ADA) School from Fort Bliss, Texas. While 2007 was a year that the Army can reflect upon with pride, I also see it as the year of the resurgence of fire support, the Field Artillery and "Red Pride."

The year was highlighted by Soldiers' accomplishments complemented by recently-fielded revolutionary munitions and systems. These new systems already are enhancing timely and effective lethal and nonlethal fires when the maneuver commanders need them. We must capitalize on our successes in precision strike—with every weapons system for each type of brigade combat team (BCT). Specifically, the promise of future developments and joint initiatives in support of our infantry BCTs (IBCTs) will enable us to introduce *the first significant developments* for our light fighters *in 25 years*. The combination of our great leaders and Soldiers, transformed organizations and increased capabilities makes us the maneuver commander's right hand, enabling him to dominate any operating environment in this era of persistent conflict.

We expect to see both standard and nonstandard missions (sometimes performed simultaneously) as the norm into the near future. So, our commanders must remain the experts in fire support and the delivery of fires for BCTs and divisions, including serving as the master trainers and integrators for mortars if required. Redlegs must maintain core competencies and simultaneously execute complex missions across the full spectrum of operations. We *are* the premier worldwide-deployable "24/7" fire support force and will continue to integrate and deliver timely joint lethal and nonlethal fires to dominate any operating environment. This is what our maneuver commanders expect from us—and we'll deliver—every time.

People. Technological advancements and enhanced capabilities are not substitutes for competent, courageous leadership. Since 2001, events have strengthened what is a demonstrated FA core competency—strong, capable and adaptive leadership.

The newly fielded M777A2 Lightweight 155-mm howitzer fires an Excalibur round from Camp Fallujah, Iraq, 4 November. LCpl Kendric Pipken, right, is a cannoneer with S Battery, 5th Battalion, 10th Marine Regiment. (Photo by MSgt Paul D. Bishop, USMC, Joint Combat Camera Center)

LTG Ray Odierno, commander, MultiNational Corps, Iraq, left, and LTC John P. Drago, commander, 2nd Battalion, 12th Field Artillery, visit the Joint Security Station East near Husayniyah, Iraq, 29 July. (Photo by SSG Curt Cashour, MNC-I Public Affairs)

As we transform, command and leadership opportunities will increase. With the addition of more BCTs and battalions, Redlegs will have more opportunities to demonstrate their leader skills at the battery and battalion levels. For FA officers and cadets who aspire to lead, command and work at the cutting edge of technology, opportunities abound in the future.

People are our prime asset, and we must cultivate and grow their enormous potential. Key for me is ensuring they have time to "take a knee," reflect upon their experiences and become better leaders in their next assignments**.** Confidence is critical and comes from coupling experience with effective training and reflection. The past six years have been tumultuous for our Army—we have performed superbly, but it has come at a cost. We must re-examine how we train so our Soldiers have the right skills at the right time. This may mean more mobile training teams (MTTs) or that we allow for more time in developmental courses to give Soldiers and leaders the break they deserve. We are looking at *all* these options at Fort Sill—taking care of our people is our most critical mission.

For enlisted Soldiers, we began to consolidate the Military Occupational Specialties (MOS) 13S FA Surveyor and 13W Meteorological Crewmember into the new MOS 13T FA Surveyor/ Meteorological Crewmember. Consolidation minimizes the risk of losing our experienced 13S Soldiers, increases promotion opportunities and provides commanders greater flexibility in assigning Soldiers within their units. Training starts in FY08, and the new "multifunctional" Soldiers will be in the field shortly thereafter.

We are looking at consolidating the fire direction MOS 13P Multiple-Launch Rocket System (MLRS) Automated Tactical Data Systems Specialist and 13D FA Tactical Data Systems (FATDS) Specialist; developing a transition training plan to ensure that our fire direction Soldiers are proficient on critical gunnery skills and can move between cannon and MLRS operations during their careers. Expanding these capabilities will serve our branch better and allow commanders to move multifunctional Soldiers around to fill critical positions.

You're probably beginning to see a pattern develop—the drive to multifunctional Soldiers. While this is a cost-effective approach and adds flexibility, we'll ensure that no skill set or core competency deteriorates as a result. We simply can't afford it.

Further into the future, we will help the Combined Arms Center (CAC) develop an electronic warfare (EW) NCO and warrant officer specialty. Recently, both combat theaters have identified a requirement for electronic attack (EA) expertise. Our sister services (especially the Navy) currently provide this capability to our combat commanders. Both Training and Doctrine Command (TRADOC) and the Army Staff have identified this evolving capability as inherently fires related, and we are exploring a concept that would create a new MOS. Those Soldiers will be the synchronizers and integrators of all EA systems for their organizations and will serve from battalion to theater headquarters levels. EW is a great opportunity for Soldiers to demonstrate their abilities to integrate and synchronize nonlethal fires and demonstrate the multifunctional nature of our Branch.

Our warrant officer corps is experiencing unprecedented growth. During the last three years, our modular organizational designs have driven up the demand for the MOS 131A Artillery Warrant Officer by more than 75 percent. We are recruiting and training warrant officers aggressively at maximum capacity and expect to be healthy by FY11.

FA officers are performing a myriad of maneuver and fires tasks in combat, often simultaneously, with great skill and precision. Because of those successes, promotion rates from captain through colonel along with opportunities to command at the battalion level never have been better. Although modularity decreased the number of headquarters supporting echelons above the BCTs, the Army recognized that Artillerymen are capable of commanding BCTs—who else has better experience and ability to integrate capabilities? I challenge commanders to prepare our officers to make them eligible and visible for BCT command. Rest assured I will be an advocate so that our officers remain competitive for future senior leadership positions. In addition, we are looking at other command opportunities at the colonel level, and I'm taking a look at what we can do to facilitate this effort from both the policy and training perspectives.

Joint Initiatives. The FA, as the joint fires leader and integrator for our Army, is extending communication links to the other Services and to the field to find innovative, effective ways to create synergy in the joint arena.

Joint Training. The Joint Operational Fires and Effects Course (JOFEC) at Fort Sill is one example of interservice collaboration. This course provides state-of-the-art training to prepare warfighters to integrate fires at corps and higher levels—to include joint task force and combatant command staffs—in a joint and multinational environment, giving them the skills to plan, coordinate and execute joint fires at the operational level across the spectrum of operations. The course has evolved, but has stayed true to its original charter and has trained hundreds of personnel from all branches of service.

As of October, JOFEC went "international," training students from Great Britain, Canada and Australia. More importantly, JOFEC will be a permanent course listed in both the Army Training Requirements and Resources System (ATRRS) and the Joint Forces Command (JFCOM) Schools catalogues.

Air Force Partnership. Air Force (AF) support to the Fires CoE and Fort Sill has soared in recent months and will increase over the next two years. The Joint Fires Observer (JFO) Course continues to expand and just graduated its 450th student. Also in mid-November, the AF conducted a feasibility study on moving a portion of the Joint Terminal Attack Controller (JTAC) Qualification Course from Nellis Air Force Base (AFB) to Fort Sill. I am negotiating with the JTAC School to obtain slots for Army personnel.

The Oklahoma Air National Guard will stand up the 138th Combat Train-

ing Squadron at Fort Sill in 2008 with a fighter unit that will provide unparalleled sortie support for training. Senior AF and Army leaders are focusing on and supporting this endeavor. Both Services are excited about the opportunities for further development.

Without hesitation, our AF partners are engaged and are essential members of the joint fires team.

JFOs. Fort Sill will graduate more than 300 JFOs by the end of this year. There are only two JFO schools—Fort Sill and Spangdahlem AB, Germany. In addition to resident training, we are planning to provide MTTs to the field in FY08. This combination of efforts will maximize the TRADOC commanding general's JFO training goal of 560 graduates for FY08. By taking the JFO course on the road, brigade fire supporters easily can update and sustain their JFO programs. We have had so much success with the course, we are considering offering it as part of the FA Captain's Career Course (FACCC) curriculum.

Training. In the past, our institutional-training philosophy focused on teaching core tasks then relying on the unit to reinforce those tasks once Soldiers arrived at their duty stations. Today, units are dealing with both standard and nonstandard missions—so we cannot continue using this philosophy. We must perform more aggressive and focused training at the FA School so our leaders are the best trained and most knowledgeable on core competencies *when they arrive* in the unit rather than relying on already over-taxed units finding time to train them. Our leaders must be able to teach *and* perform core tasks.

FSCOORD Course. Operations in Iraq and Afghanistan indicated that we needed trained fire support coordinators (FSCOORDs). Our fires battalion commanders, in many cases, performed maneuver missions and were "land owners" and didn't have the time to advise the FSCOORD as was done in the past. We created the FSCOORD Course to train and equip these professionals with the right fire support skills and confidence to integrate lethal and nonlethal fires. Fort Sill hosted our first pilot course in June and a second pilot in September that was modified based on post-course feedback from students and maneuver commanders in the field. This course, which will continue to be modified based on field input, supports the field and maintains our fires expertise by sharing tactics, techniques and procedures (TTPs).

Core Competency Training. The use of FA Soldiers in nonstandard missions with little time to reset upon redeploying is one of my major concerns—core competencies must be maintained because we cannot predict what skill sets will be needed in the next fight. The FA Center's Lessons Learned Cell and Doctrine Division are collecting current trends and "best practices" for sharing with the Army. One way we are keeping the field abreast of new developments and TTPs is a "Reachback" site on the Fires Knowledge Network (FKN) that allows for single sign-on access to a host of FA training courses via the internet. The database is growing and improving and has everything from lesson plans and class slides to three-dimensional (3D) interactive-media instruction.

We are providing the field with the training in demand by taking assets "out of hide" to create an MTT program that deploys subject matter experts to a unit's location in response to commander requests. This is a great opportunity for a commander to get institutional level, by-the-book training for his unit immediately—without sending Soldiers to Fort Sill.

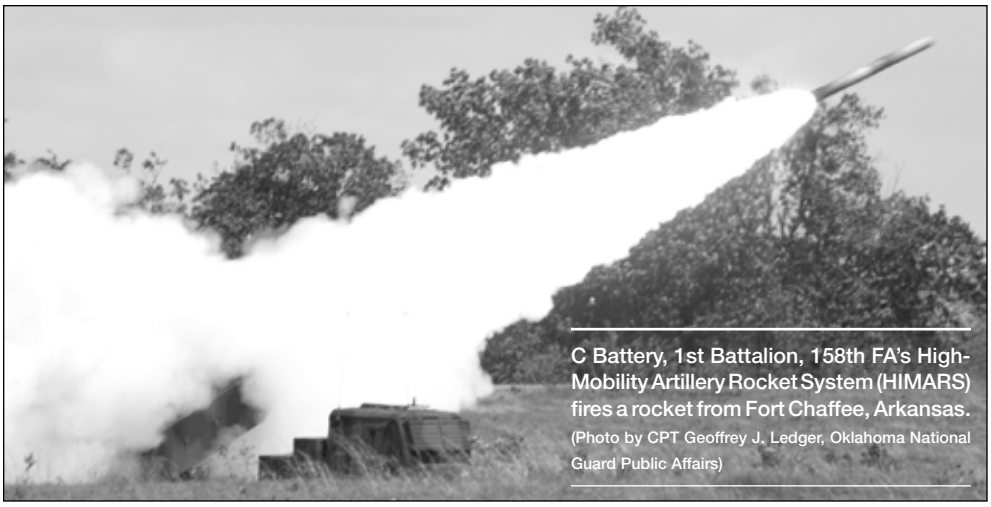
Tactical Information Operations. Emphasizing full-spectrum capabilities, the Tactical Information Operations Course (TIOC) just completed its first full year. The course trains officers and NCOs, including students from active and Reserve Components and other services, to perform as members of an IO cell at BCT level and below and gives them a working knowledge of tactical IO integration. The course receives weekly updates from theater, making this a timely and relevant instructional block. In FY08, we'll add two MTTs that will give instruction directly to the field. I encourage FSCOORDs and commanders to recommend this course to maneuver S3s and executive officers—before preparation for deployments begin—to teach staffs what IO capabilities are available and how they can be used to accomplish the units' missions.

EW Integration Course. EW has received a great deal of attention due to recent WOT operations. As units deploy, the Army requires commanders at the battalion level and above to have a school-trained electronic warfighter on the staff. Fort Sill is the single-source trainer for offensive EW planning, synchronization and integration for brigade and higher organizations. Until a full-time EW MOS is approved and filled, Fort Sill will continue to train fire support personnel as EW integrators.

Training Aids, Devices, Simulations and Simulators (TADSS). Technological training tools have enhanced training for combat missions—at Fort Sill, home-station and even while deployed. The 3D video computer technologies allow increased student throughput, class interaction and self-paced individual training. These 3D simulations conversely allow Soldiers in the field to reach back for refresher training.

Our Joint Fires and Effects Training System (JFETS) continues to be a model virtual training experience. It is an adaptive and realistic system that replicates almost any environment our Soldiers and leaders will encounter. Future developments may include simulated and interactive instruction on laying

After logging more than 500 ground and air transport missions in Iraq, SGT Walter Ludka and his fellow C Battery, 1st Battalion, 14th Field Artillery Soldiers greet family members and friends at Fort Sill, Oklahoma, 1 September. (Photo by Keith Pannell, *the Cannoneer*)



C Battery, 1st Battalion, 158th FA's High-Mobility Artillery Rocket System (HIMARS) fires a rocket from Fort Chaffee, Arkansas. (Photo by CPT Geoffrey J. Ledger, Oklahoma National Guard Public Affairs)

the battery, gunnery fundamentals and targeting—another way of maintaining core competencies if we have interactive simulations that we can deploy with units—regardless of their mission.

Modularized Instruction. Due to CCC student-survey results, we realized the need to get more training in the areas of FA hands-on systems and leader tasks—joint fires, EW and tactical IO. We are examining how to incorporate these competencies into every NCO and company grade officer course. My guidance to the School is to explore ways to take the best modules from the TIOC, JFO and EW courses and incorporate them into the existing CCC curriculum. With an "elective-type" approach, we could offer subjects so that the last module a student receives will be tailored to his or her follow-on assignment.

Capabilities. The FA is now, more than ever, a *system of precision systems*. We constantly are working to incorporate precision capabilities in each of the five elements of accurate and predicted fire—the cornerstone of our profession and the basis for the metrics that commanders use to determine effectiveness. Precision capabilities are being made an integral part of munitions, weapons platforms, target acquisition, meteorological, and fire support command, control and communications (C^3) capabilities.

Precision Fires in the Fight. FA precision capabilities are making significant contributions to the maneuver commander's fight. It's great to hear maneuver commanders fondly calling guided MLRS (GMLRS) "my 70-kilometer sniper weapon." Our maneuver commanders are using the FA's all-weather precision systems to achieve instant effects on the battlefield. The concern with collateral damage is always present, and our systems provide "scaled lethality" in support of ongoing combat operations. Precision artillery munitions and supporting precision targeting capabilities provide commanders greater options and flexibility for using artillery in restricted and constrained terrain. Most importantly, they are proving invaluable to Soldiers and Marines in close combat.

GMLRS Unitary rockets provide the tactical commander accuracy to within 20 meters at ranges from 15 to 70 kilometers. Rockets now are considered a viable alternative in the close fight when a "bigger bang" is required. As of today, FA units have fired more than 450 GMLRS unitary rockets in combat operations. We also have fielded recent rocket enhancements that allow engagement of targets in heavy urban terrain and over crests (mountains and buildings). High-Mobility Artillery Rocket System (HIMARS) performance in Afghanistan has been phenomenal in support of conventional and Special Operations Forces—a real success story.

The Excalibur (M982) extended-range cannon projectile is giving the BCT commander a precision capability previously unseen. Excalibur is allowing the ground commander to attack high payoff and the most dangerous targets in all types of weather and terrrain with a payload one-third the size of GMLRS, enabling commanders to further minimize collateral damage. Excalibur has been employed against insurgent safe houses, reinforced fighting positions and in support of troops-in-contact (TIC) with great success.

To provide increased accuracy and precision when using conventional artillery munitions, we are working to field precision guidance kits (PGKs) that can be applied to conventional artillery ammunition. In its current design, guidance systems are accurate to within 30 meters at all ranges as opposed to current circular error probable (CEP) which increases as range to target increases. We are working to fit PGKs for most 155-mm projectiles initially then move on to 105-mm. A benefit of PGKs is that they allow for more efficient cannon artillery fires, resulting in fewer rounds required. PGKs will not replace Excalibur—they will complement it, providing more accurate fires for targets to be attacked with conventional munitions while Excalibur provides precision point (10 meters or less) fires.

Presently, the IBCT does not have an organic precision capability. My queries to maneuver corps, division and BCT commanders revealed that their priorities for fire support are precision, responsiveness, mobility and range, in that order. Because nearly 60 percent of the future force will consist of IBCTs, we are looking at ways to address the capability gap.

Our first effort is to develop requirements for a "105-mm precision munition," which will be more accurate and lethal. We also are pressing forward on lightening the load for our fire support teams (FISTs) in terms of target location and laser-designation equipment. Finally, we're taking a look at what the IBCT howitzer of the future should be. While only in the concept stages, we are collecting ideas from industry.

We recently collaborated with Special Operations Command and the AF to provide a "continuous update capability" to the HIMARS. This "enhanced initialization" gives launchers the capability to roll off an aircraft, fire and roll back on to the aircraft within minutes. This expeditionary capability is there should the commander need it.

Several new capabilities have been added to our automated fire support systems. The Precision Strike Suite-Special Operating Forces (PSS-SOF) is integrated into the Forward Observer Software (FOS) application. FOS is our standard application available to all fire support platforms using the rugged handheld computer. Fire supporters can generate a precision target location and engage with Excalibur, MLRS or other precision munitions. We are working to give a PSS-SOF-like capability to the dismounted observer through the pocket-

The Non-Line-of-Sight Cannon (NLOS-C) firing platform is tested at Yuma Proving Ground—the system will be produced at a new facility in Elgin, Oklahoma. (Photo courtesy of BAE Systems)

sized forward entry device (PFED). This capability has been proven in several exercises and should be validated by the National Geospatial Agency, Bethesda, Maryland, soon.

There have been several recent Advanced FATDS (AFATDS) updates to account for the fielding of Excalibur and our newest 155-mm howitzer, the M777. A significant update was the addition of the munitions flight-path message. The message is generated when a precision munition, GMLRS or Excalibur, is fired. The message essentially draws a "soda-straw" through the airspace depicting the flight-path of the round or rocket. It is routed to the necessary airspace command and control (AC^2) nodes at all levels to help speed deconfliction of the fire mission.

We* are *the premier worldwide-deployable "24/7" fire support force and will continue to integrate and deliver timely joint lethal and nonlethal fires to dominate any operating environment.

Future Precision Fires Systems. Recently, BAE Systems broke ground on the new Non-Line of Sight Cannon (NLOS-C) system plant in Elgin, Oklahoma. NLOS-C is the first future combat system (FCS) and will provide networked, extended-range precision attack of point and area targets for the FCS-equipped BCT (FBCT). The system provides flexible support through its ability to change effects in stride. These capabilities, combined with rapid calls for fire and rate of fire, provide a variety of effects on command. After 10 months of live-fire testing at Yuma Proving Grounds, Arizona, NLOS-C successfully achieved its firing capability. As the Army's first fully automatic FA cannon system, it is demonstrating the potential of this new technology. NLOS-C is approved for initial production, and the first battery will be fielded in 2010 to the Army Experimental Task Force (AETF) at Fort Bliss, Texas.

While the NLOS-C is our weapon system of the future, we must not forget Paladin howitzers will be in our inventory until 2050. Therefore, we have developed Paladin Integrated Management (PIM), a cost-effective upgrade and modernization program for our Paladins. This upgrade will put the howitzer on a modified Paladin chassis with Bradley internal components and suspension and spin in NLOS-C developments. During this process, we will receive user feedback and improve the components as they are built for NLOS-C. The result will be a modernized and upgraded howitzer that can keep up with the Bradley and Abrams families of vehicles and improved systems rolling off the NLOS-C line.

In the future, the NLOS-Launch System (NLOS-LS) will be part of each BCT fires battalion. The system consists of more than a dozen individual, containerized precision attack missiles (PAMs). The PAM is launched vertically and uses navigational aids to find the target. The12-pound shaped charge warhead is capable of defeating a variety of targets. The system gives the BCT commander an organic precision guided munition (PGM) capable of engaging and defeating targets out to 40 kilometers. NLOS-LS prototypes already have been fielded to the AETF, and the new equipment training (NET) was a complete success.

Building the Fires CoE. We are moving forward with establishing the Fires CoE. This year has marked two important milestones in our goal to have the Fires CoE fully operational by 2010. In FY07, we received all funding for both increments of military construction to restation the ADA School—the work is ongoing and on schedule. We also have reorganized offices at Knox Hall and have established the Combat Development and Integration Directorate (CDID). The CDID replaces the Futures Development and Integration Directorate (FDIC) at Fort Sill and the Directorate of Combat Developments and ADA Battle Lab at Fort Bliss—merging these two organizations to gain efficiencies, especially in the areas of development and experimentation. At present, we are "virtually" conducting business, but we look forward to the day when our ADA comrades will be in the same building. The Fires CoE will merge certain functions gradually, while keeping the branches separate. Given that we are in the middle of a protracted conflict, we *must* maintain both FA and ADA core competencies. There will be opportunities to merge curricula and logistic functions as we bring the schools together at Fort Sill starting in FY09. Our commitment to excellence will remain the same, producing the world's finest *Artillerymen* for the world's finest Army.

Red Pride. As I examine the accomplishments of the past year, one phrase comes to mind, "Red Pride." This Branch, *our* Branch, should be extremely satisfied with all that we have done. Many ideas and initiatives are started by our talented leaders, Soldiers and commanders in the field. In many cases, we have taken their insights and encouraged our thinkers and industry partners to be innovative. The results are proof positive that we must maintain an interactive "network" to keep the *King of Battle* adaptive, resilient and stronger than ever.

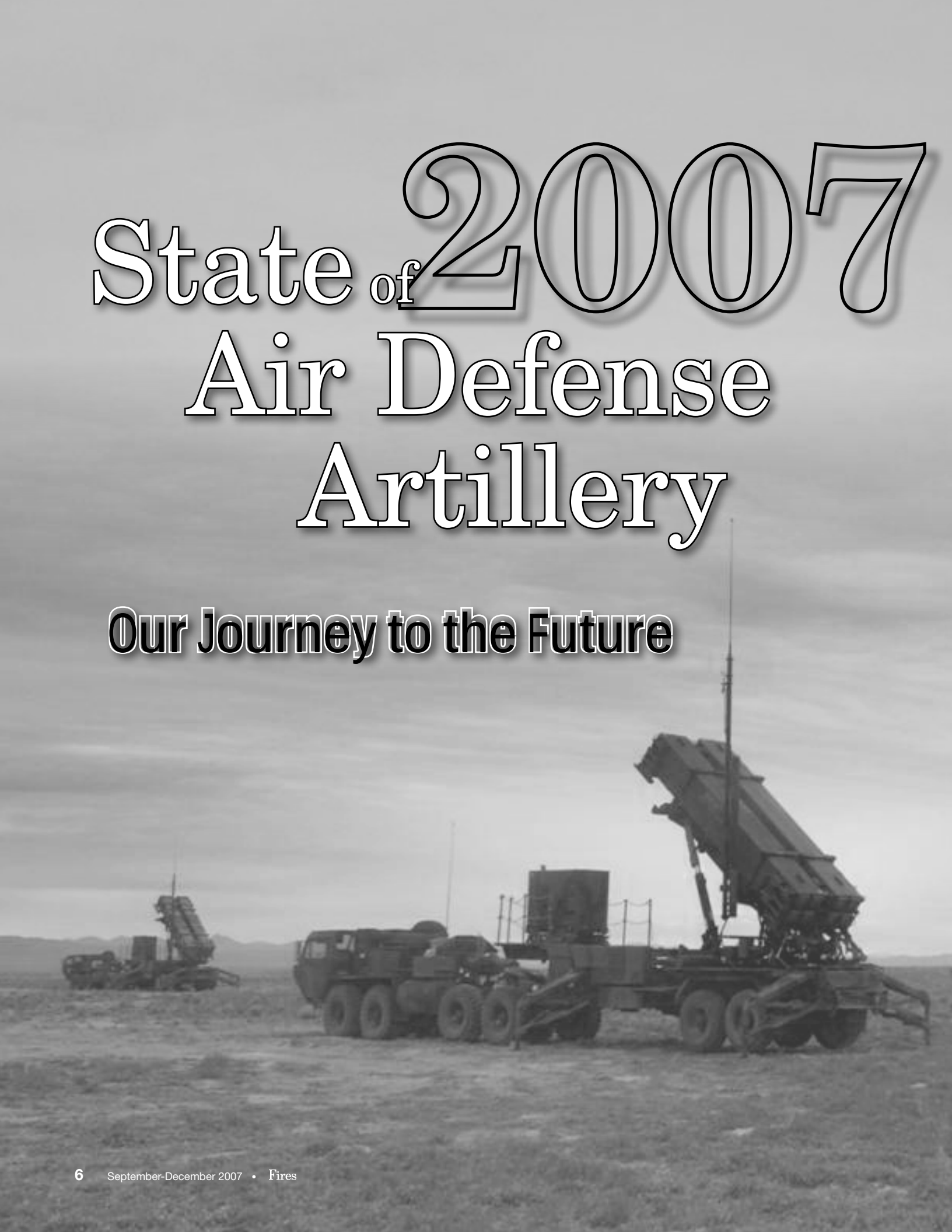
Our fire supporters are with their maneuver commanders every step of the way. Many of our leaders are experienced combat veterans who understand the requirement to be precise, agile and lethal. *We are* the Army's experts for the delivery and integration of lethal and nonlethal fires for maneuver commanders and joint forces. Seeing these great Soldiers and leaders makes me very optimistic about our Branch's future. I'm so proud to be one of them—an *Artilleryman*.

These are times of great opportunity for our Branch. Stay engaged and "in the know" as we transform. Come up on the net anytime and personally let me know where we can enable maneuver commanders to Anticipate, Integrate and Dominate any operating environment—*Artillery Strong—King of Battle—Red Pride!*

Major General Peter M. Vangjel is the Commanding General Fort Sill, the Commandant of the US Army Field Artillery School (USAFAS), Fort Sill Oklahoma and Chief of FA. He was the Director of Strategy, Plans and Policy, Office of the Deputy Chief of Staff, G-3/5/7 in Washington, DC; Effects Coordinator for the MultiNational Corps-Iraq, deploying to Operation Iraqi Freedom; Commander of XVIII Airborne Corps Artillery, Fort Bragg, North Carolina; and the Deputy Commanding General, US Army Recruiting Command, at Fort Knox, Kentucky. He has served as the Chief of Staff, 1st Infantry Division, in Germany; Commander of the 18th Field Artillery Brigade (Airborne) and the Senior Plans Officer for the 1st Battlefield Coordination Detachment, both part of the XVIII Airborne Corps, at Fort Bragg; the Field Artillery Colonels Assignment Officer at Personnel Command (later Human Resources Command). He also has served as Commander, 5th Battalion, 3rd FA (5-3 FA) at Fort Sill and the Executive Officer, deploying to Operations Desert Shield and Desert Storm, and S3 of 1-27th FA in Germany. He holds two Masters, one in National Security and Strategic Studies from the National Defense University, Washington, DC.

State of 2007 Air Defense Artillery

Our Journey to the Future



By Major General Robert P. Lennox
Chief of Air Defense Artillery

Where does one begin to describe the State of the Branch when that branch has experienced as much change and as many challenges as Air Defense Artillery (ADA) has during the past year? Because this is my first opportunity to "talk turkey" in the joint *Fires* Bulletin, I'll begin by expressing my optimism with the branch, our fine officers, NCOs, enlisted and civilian Soldiers, and by acknowledging their hard work and dedication during the last year.

Air Defenders have taken on many diverse missions and have deployed to the far corners of the earth. This is my opportunity to describe what your fellow Air Defenders are doing and where ADA is headed in the future. This also is an opportunity to share information with our Field Artillery (FA) brethren and to learn about FA's unique missions and challenges from the partner FA State of the Branch article in this edition.

This year has been a tough one for ADA due to multiple and often overlapping deployments, rotations and restationings, but our Soldiers, civilians and Families have accomplished all that was asked—and more.

For more than 50 years, Fort Bliss, Texas, has been home to the US Army Air Defense Artillery School (USAADASCH). During the past year, USAADASCH trained more than 4,000 personnel and deployed mobile training teams (MTTs) to Iraq, Afghanistan and throughout the United States. ADA continues to forge ahead with programs for combat development, enhanced and improved training and leader development using lessons learned. We also have kept pace with doctrinal changes to meet the rapidly changing enemy threat.

We all know change is inevitable—that is especially true in ADA—but I am secure in the knowledge that Air Defenders are meeting the challenges of base transformation and the restationing of the force. In fact, we are leading the way in the Army.

...I am in awe of what we have accomplished this year and humbled to represent the many* Army Strong *Soldiers, civilians and Family members around the world today.

Weapons Technologies. The Future Force Integration Directorate (FFID) and Army Evaluation Task Force (AETF), key to developing and testing the Army's future combat systems, are up and running at Fort Bliss. Additionally, ADA rapidly is improving existing weapons system capabilities and developing new technologies to meet the evolving and emerging threats.

Patriot. In October, the Army awarded Raytheon a $150 million contract to launch the Patriot "pure fleet" modernization program. The program, which features hardware and software enhancements, will bring all Army Patriot equipment to state-of-the-art Patriot configuration-3 status. These enhancements will ensure that Patriot remains the preeminent theater air and missile defense (TAMD) system as it evolves into the Medium-Extended Air Defense System (MEADS).

MEADS. MEADS is a cooperative effort between the United States, Germany and Italy to develop an AMD system that is both mobile and transportable. MEADS technology is being spiraled into the Patriot Advanced Capabilities-3 (PAC-3) upgrade incrementally rather than waiting 15 years for a total missile replacement. In the first phase, Patriots will receive a battle management command, control, communications, computers and intelligence (BMC^4I) station to improve situational awareness and allow for force operations and engagement operations from a single shelter. Phase two is the fielding of a lightweight launcher capable of near-vertical tube positioning that facilitates 360-degree coverage. In the third phase, Patriot batteries will receive two multi-functional fire control radars and one sensor radar, all mounted on the family of medium-tactical vehicles (FMTVs). This will allow for a mobile 360-degree defense against medium- and short-range tactical ballistic missiles, unmanned aerial vehicles (UAVs), hostile aircraft, jammers and cruise missiles. The Patriot to MEADS metamorphosis, which is expected to take about a decade, will produce a more transportable, mobile and lethal AMD system.

THAAD. The Terminal High-Altitude Area Defense System (THAAD) is a ground-based terminal phase launcher-radar designed to defend against short- and medium-range ballistic missiles both inside and outside the atmosphere, significantly mitigating the effects of weapons of mass destruction. Its launcher is in a mobile, tactical fire unit with eight missiles per launcher and three launchers per fire unit. Its radar provides early warning to the specific location threatened by a ballistic missile and precise tracking of the missile, including in-flight data updates, plus an accurate determination of the missile launch point.

THAAD will provide high-altitude missile defense over a larger area than the complementary Patriot system and, like the Patriot, will intercept a ballistic missile target in the "terminal" phase of flight—the final minute or so of flight when the hostile missile falls toward the earth.

Following a string of successful flight tests, ADA took the THAAD system from the White Sands Missile Range (WSMR), New Mexico, to the Pacific Missile Range Facility

A Patriot Advanced Capabilities-3 (PAC-3) launcher stands between two PAC-2 launchers, signaling the advent of the "Pure Fleet" modernization program. (Photo courtesy of Air Defense Artillery [ADA] Training and Doctrine Command Capabilities Manager - Lower Tier)

(PMRF) on the island of Kauai, Hawaii, for further testing. With 6th ADA Brigade Soldiers operating all THAAD equipment (the launcher, fire control and communications systems and radar), THAAD quickly scored three successive intercepts.

Conducted in January 2006, the first test was a high-endo-atmospheric intercept. A second test conducted in April 2006 also was a success, involving a mid-endo-atmospheric target. In late October 2006, THAAD scored an exo-atmospheric intercept, destroying a target outside the earth's atmosphere. The Missile Defense Agency (MDA) will conduct two intercept tests of the THAAD interceptor in 2008—one against a separating target in space and the other against a separating target high in the endo-atmosphere.

We expect to achieve THAAD initial operational capability in 2009, and initially plan to field two THAAD battalions, each with four batteries. Future plans call for four THAAD battalions that will operate along the US coast or in allied countries.

JLENS. The Joint Land-Attack Cruise Missile Defense Elevated Netted Sensor (JLENS) will be able to detect small aerial targets at long ranges and provide precise fire control data to Air Defense units. The JLENS elevated dual-Aerostat system (a ship- or ground-moored balloon supporting radar systems) provides two radars, one for wide-area surveillance at long ranges and one for shorter ranges with precision tracking for long duration missions. The focus is on providing data for attacking cruise missiles and other moving targets, such as large-caliber rockets.

In April 2006, JLENS passed its system functional review—a major milestone that permitted the program to progress to the preliminary design phase. Each JLENS system consists of a long-range surveillance radar and a high-performance fire-control radar mounted on a large Aerostat connected by a tether to a ground-based processing station. Scheduled for fielding in 2012, when we will begin replacing currently fielded Aerostats and Rapid Aerostat Initial Deployment (RAID) towers, JLENS will provide a long-duration, wide-area cruise missile capability while also supplying the battlefield commander with situational awareness and elevated communications capabilities.

The system provides over the horizon detection and tracking of incoming cruise missiles with sufficient warning to enable air defense systems to engage and defeat the threat. JLENS will relay target data to ADA Avenger and Patriot sys-tems and, eventually, to the Surface-Launched Advanced Medium-Range Air-to-Air Missile (SLAMRAAM) system.

SLAMRAAM. Beginning around 2011, SLAMRAAM gradually will begin replacing Avenger systems, enabling ADA units to engage cruise missiles, helicopters and UAVs over the horizon and beyond the line of sight.

SLAMRAAM will address the threat posed by cruise missiles, UAVs and unmanned combat aerial vehicles. SLAMRAAM will be able to destroy aerial targets being masked by terrain or clutter, operating in reduced visibility or employing standoff capabilities beyond the range and altitude of our current Stinger-based weapons. In attacking cruise missiles or other targets over the horizon, it will use an elevated sensor platform—the JLENS.

C-RAM. Counter-Rocket, -Artillery and -Mortar (C-RAM) systems is a multibranch program to counter enemy indirect fires in WOT. Its purpose is to improve persistent surveillance on the enemy, enhance the fusion of sensors that acquire the enemy and facilitate both proactive and reactive responses to enemy indirect fire.

During 2007, C-RAM, manned by ADA and FA Soldiers and assisted by US Navy personnel, successfully continued to counter indirect-fire attacks directed at forward operating bases (FOBs) in Iraq and Afghanistan. These systems alerted targeted personnel, initiated countermeasures and intercepted and destroyed incoming rounds. These intercepts should have made headlines, but were hidden behind a veil of operational security. Now, the Army has released public affairs guidance that permits much of the C-RAM story to be shared.

Like the Patriot-Scud engagements of Operation Desert Storm (ODS), the C-RAM engagements of Operation Iraqi Freedom (OIF) herald a new era in warfare. And like the first tactical ballistic missile engagements, they have the potential to transform the way we fight in the future.

Transformation, Restationing and Deployments. Air Defenders have been busy resetting, moving and supporting missions worldwide this year, and I salute them for the professionalism and dedication with which they attack and excel at every mission.

ADA Soldiers assigned to newly created Air Defense Airspace Management (ADAM) cells, which include Sentinel radar sections and command, control, communications and intelligence (C^4I) components, deployed with divisions and brigade combat teams (BCTs) to Iraq and Afghanistan. These cohesive teams of ADA officers, warrant officers and enlisted Soldiers made vital contributions by unraveling the crowded airspace above the battlefield. By effectively managing the airspace, the ADAM cell teams accelerated counterfire reaction times and improved restricted-operations zone deconfliction, thereby enhancing

Major General Robert P. Lennox, Chief of ADA, talks with Soldiers of the 5th Battalion, 7th ADA (Patriot), in Schweinfurt, Germany, 19 September. The Patriot crewmembers spent two weeks practicing Patriot system emplacement and other procedures in preparation for deployment. (Photo by SSG John Queen, 69th ADA Brigade Public Affairs)

the combat effectiveness of all fires and UAVs as well as rotary- and fixed-wing platforms. Our ADAM cell Soldiers have become the vital link for all AMD and Army airspace command and control (A^2C^2) operations in the joint environment.

In Afghanistan and Iraq, ADA Soldiers deployed RAID towers and Aerostats rigged with television cameras with zoom lenses, infrared systems for night vision and laser rangefinders to give ground commanders a "persistent stare" at the battlefield. The Aerostats, as you might imagine, present tempting targets, but according to an *Army News* reporter, ADA Soldiers simply patch up the bullet holes, top them off with helium and send them back up.

Numerous other active Army, Army Reserves (USAR) and Army National Guard (ARNG) Air Defenders deployed to Iraq and Afghanistan in support of OIF and Operation Enduring Freedom (OEF), performing traditional and nontraditional ADA missions. Similar to FA Soldiers, ADA Soldiers are members of military transition teams (MiTTs)—often described as the world's most dangerous job. These Soldiers serve as instructors, advisors, translators, convoy security, truck drivers and military police assistants where and when needed.

Closer to home but still engaged in the War on Terrorism, the 1st Battalion, 265th ADA (1-265 ADA) from Daytona Beach, Florida, recently relieved the 2-174 ADA from McConnelsville, Ohio, of its mission to maintain defense of critical assets in the National Capital Region (NCR). Assuming a mission begun by active Army ADA units in the aftermath of the 11 September 2001 terrorist attacks, these ARNG Soldiers crew Sentinel radars and a foreign weapon system—the Norwegian Advanced Surface-to-Air Missile System (NASAM)—to defend the nation's most valued assets against terrorist air and missile attacks.

At Fort Greely, Alaska, and Vandenberg Air Force Base, California, Alaska ARNG ADA Soldiers with the 100th Missile Defense Brigade (Ground-Based Missile Defense or GMD) continue to test the GMD system. The system interceptors use hit-to-kill technologies to destroy intermediate- and long-range ballistic missile warheads in space, in the midcourse phase of flight. These are the weapons the US relies on to defeat longer range threats once they have been launched. At the end of April, we had 16 interceptors in silos at Fort Greely and two more at Vandenberg. The interceptor inventories at these sites are expected to reach 24 by the end of this year.

ADA Army National Guard (ARNG) Soldiers from Ohio and Florida crew the Norwegian Advanced Surface-to-Air Missile System (NASAM) and defend the National Capital Region (NCR) against terrorist air and missile attacks. (Photo courtesy of 2nd Battalion, 174th ADA)

The GMD system briefly went operational for the first time in 2006 in response to a flurry of North Korean ballistic missile tests. Today, the GMD system is still in development and testing mode, but it quickly can be reactivated in an emergency. Senior MDA leaders, impressed by a string of successful intercept tests, have expressed high confidence in the system's capability to protect the US from limited long-range ballistic missile attacks.

In July, the Pentagon announced details of a proposal to expand the GMD systems by stationing 10 GMD interceptors in Poland. These interceptors, nearly identical to those in Alaska and California, would be housed in underground silos in an area about the size of a football field. The proposal is now the focus of an international debate; however, it opens the possibility of an expanded mission for ADA Soldiers.

Meanwhile, this year's noncombat deployments began reshaping the ADA force. The 108th ADA Brigade—my old brigade—has moved from Fort Bliss to Fort Bragg, North Carolina. The 1st Battalion, 1st ADA (1-1 ADA) closed on Okinawa, the first ADA unit on the island since the early 1970s, and the first in the projected Okinawa rotation cycle. Four Patriot batteries moved from Fort Bliss to Fort Hood, Texas, and this spring 1-43 ADA returned to Fort Bliss from Korea and was replaced by 1-7 ADA. The 2-1 ADA is completing a Korea rotation and is being replaced by 1-44 ADA. The 3-43 ADA and E/1-44 ADA are in Qatar/Kuwait performing Central Command (CENTCOM) missions in country; and 5-5 ADA from Fort Lewis, Washington, has spent the past year (plus) in Iraq in support of OIF.

In October, our 94th Army Air and Missile Defense Command (AAMDC), Fort Shafter, Hawaii, activated a Forward-Based X-Band radar in Shariki, on the outskirts of Tokyo, Japan. The detachment will provide operational control over and maintenance on the radar system, which is designed to provide early warning against ballistic missile threats. This radar will be the keystone of the ballistic missile defense shield that will protect both Japan and the US. ADA Soldiers also manned a newly deployed Joint Tactical Ground Station (JTAGS) in nearby Misawa.

Personnel Matters. ADA NCOs and enlisted Soldiers have weathered the worst of the personnel turbulence that arose with the Army's transformation to the BCT becoming its primary operational capability. Due to the change in divisional structure, our inactivated divisional ADA battalions downsized and merged with the Patriot force to create composite AMD battalions. The Army also eliminated Bradley Stinger Fighting Vehicles (Linebackers) from the Army inventory.

ADA officers also are facing changes, but these are welcome changes. To facilitate career progression of future officers, the Army has made significant changes to historical career paths. The recently up-

dated Department of the Army Pamphlet (DA Pam) 600-3 Commissioned Officer Development and Career Management reflects a shift toward modularity. For example, branch qualification no longer is dictated in DA Pam 600-3, and battery command no longer is a prerequisite for promotion to major. Branch qualification assignments have been replaced by key and developmental assignments. This new modular design offers more abundant and more flexible assignment opportunities for ADA officers.

As the Army continues its transformation, Air Defense Artillery also continues its transition to a more flexible and mobile branch. During this past year**,** we made substantial progress in developing, testing and fielding integrated, layered AMD systems to defend the US, our deployed forces and our allies and friends against ballistic missiles of all ranges in all phases of flight. As always, we are counting on ADA officers, NCOs and enlisted Soldiers to lead the branch through these turbulent and uncertain times brought on by the War on Terrorism.

Future ADA Soldiers must be multitalented, resilient and quickly adaptive. I can tell you with confidence that today's ADA Soldiers are definitely up to the task.

Embracing the Future. When 6-52 ADA arrived at Fort Sill, Oklahoma, in July 2006 and immediately began off-loading 102 railcars worth of Patriot missile launchers and equipment, it served as an initial introduction of ADA to Fort Sill and the FA Branch and the beginning of a great partnership. This integration and development of our future together will be enhanced further by the ADA School's move to Fort Sill during the next few years.

ADA Soldiers and FA Soldiers have a lot in common. We have been through a lot together, especially since the Twin Towers came crashing down on 11 September 2001. ADA Soldiers have shared the hardships of fighting the War on Terrorism. ADA Soldiers also have endured long separations from family and loved ones, watched friends die and survived adrenaline-pumped moments of sheer terror mixed with long hours of agonizing boredom. ADA Soldiers, like all Soldiers, have persevered, kept the faith and earned the right to hold their heads high.

ADA and FA Soldiers also share a deep conviction that their respective branches have uniquely decisive roles to play on future battlefields. Both are relevant and ready today and are critical to the future success of our Army.

As the Chief of ADA, I am in awe of what we have accomplished this year and humbled to represent the many *Army Strong* Soldiers, civilians and Family members around the world today—*First to Fire!*

The Land-Based Phalanx Weapon System, the engagement component of the Counter-Rocket, -Artillery and -Mortar (C-RAM) System, fires during a live-practice drill at a forward operating base in Iraq. ADA and Field Artillery are collaborating with the Navy on C-RAM. (Photo courtesy of the Department of the Navy)

Major General Robert P. Lennox is the Commanding General of the US Army Air Defense Artillery Center and Fort Bliss, Texas, (USAADACEN&FB), Commandant of the US Army ADA School (USAADASCH) at Fort Bliss, and Chief of ADA. He served as the Deputy Commanding General (DCG) and Chief of Staff for Accessions Command at Fort Monroe, Virginia; DCG, US Army Space Command and DCG for Operations, Space and Missile Defense Command (SMDC) at Peterson Air Force Base, Colorado; and DCG, USAADASCH, Fort Bliss. He commanded the 108th ADA Brigade, Fort Bliss; 1st Battalion, 2nd ADA (1-2 ADA), Fort Polk, Louisiana; and C Battery, 1-67 ADA , 9th Infantry Division, Fort Lewis, Washington. He also served as an Instructor, Course Director, Assistant Professor and later Associate Professor of Military Science at the US Military Academy, West Point, New York; and Executive Officer of 4-43 ADA (Patriot), 32nd Army Air Defense Command (AADCOM), Giessen, Germany, deploying to Saudi Arabia in support of Operation Determined Resolve. He has a Masters Degree in National Security Strategy from the National War College, Fort Lesley J. McNair, Washington, DC.

ADA Museum— Opens New Exhibits

New exhibits opened 1 November at the Air Defense Artillery (ADA) Museum. The new exhibits are "Antwerp-X" and "Remagen (or Ludendorff) Bridge."

The Air Defense Artillery Museum is aligned with the Fort Bliss Museum and Study Center, which has exhibits of artifacts and weapons from the Civil War to today's War on Terrorism.

For more information on the US Army Air Defense Artillery Museum and the history of ADA, visit https://www.bliss.army.mil/Museum/fort_bliss_museum.htm or call (915) 568-6009.

MG Peter M. Vangjel Becomes the 37th Chief of Field Artillery

On 13 September, Major General David C. Ralston, the Commandant of the Field Artillery School, Commanding General of Fort Sill and 36th Chief of Field Artillery (FA), gave up command to Major General Peter M. Vangjel. The ceremony was conducted by Lieutenant General William B. Caldwell, Combined Arms Center Commander, at the Old Post Quadrangle on Fort Sill, Oklahoma.

At the ceremony, General Ralston, the Chief of FA since August 2005, also marked his retirement after 32 years of service.

During his tenure, FA worked with Air Defense Artillery (ADA) on Base Realignment and Closure (BRAC)-directed changes and stood up the virtual Fires Center of Excellence on 1 June at Fort Sill in preparation for the ADA School's arrival from Fort Bliss, Texas. Under his direction, Artillery units continued the transformation process to modular design, converting from FA battalions to Fires battalions while still providing timely and accurate fires to maneuver commanders fighting the War on Terrorism (WOT). Also, new weapons and equipment were incorporated into the FA units during his tenure, including precision-guided munitions (PGMs), adding small-scale precision munitions to ground commanders' arsenals and complementing the Air Force's available large-scale precision munitions. General Ralston directed the modification and redesign of the FA School's classes to meet skills required by units deploying to WOT, including the addition of counterinsurgency (COIN) instruction for officers.

Before the change of command portion of the ceremony, Brigadier General Vangjel was promoted to Major General by General Bantz J. Craddock, Supreme Allied Commander Europe.

Major General Vangjel's most recent assignment was as the Director of Strategy, Plans and Policy for the Office of the Deputy Chief of Staff, F-3/5/7, in Washington, DC. General Vangjel, who was commissioned through the University of New Hampshire Reserve Officer Training Corps, has commanded units at every level from battery to corps Artillery encompassing several weapons systems in the United States Field Artillery arsenal. He has served on multiple operational deployments, including Operations Desert Storm, Desert Shield and Kosovo and Operations Iraqi Freedom I and II. His staff assignments include tours at the Pentagon on both the Joint and Army staffs.

General Vangjel and his wife Joanne have three children: Peter, Matthew and Jennifer. He holds two Masters, one in National Security and Strategic Studies from the National Defense University, Washington, DC, and one in Administration from Central Michigan University, in Mount Pleasant.

The ceremony included changing of the Field Artillery Half Section's guidon, which represents the first command of the Commanding General. General Ralston's C Battery, 6th Battalion, 33st Field Artillery (C/6-33 FA) guidon was exchanged for General Vangjel's C/2-321 FA guidon.

In addition to the FA Half Section, other units in the ceremony included 428th and 434th FA Brigades, 214th and 75th Fires Brigades, Fort Sill Army Garrison, US Marine Corps Artillery Detachment, 77th US Army Band and 2-2 FA.

Above: MG Peter M. Vangjel, left, receives the colors from LTG William B. Caldwell signifying his assumption of command from MG David C. Ralston who looks on. Right: MG Ralston, left, MG Vangjel, center, and LTG Caldwell review the Soldiers during the change of command ceremony. (Photos by Jerry Bryza, Jr.)

Retooling the Artilleryman

By Captains David K. Smith, David W. Eastburn, William H. Snook, Stephen D. Poe and Steven R. Simmons and Major Christopher W. Wendland, all FA

The 2nd Battalion, 17th Field Artillery (2-17 FA), *Steel*, had returned from Ramadi, Iraq, in 2005 for only a few months when chatter started within the ranks about another deployment. For the Artillerymen of *Steel*, the talk about *when Steel* would return to Iraq seemed less important as to *how* it would return. Training is vital to every battalion, but 2-17 FA had not completed its transformation from a 155-mm Paladin unit into a 105-mm howitzer unit yet. The question was obvious: Train as infantry, train as Artillery or train as both?

The battalion commander attacked the problem by preparing the Redlegs for both missions—and not with 50 percent effort into each—ensuring *Steel* would be a multifunctional battalion able to accomplish FA as well as infantry missions. The battalion received essential support from the brigade commander of the 2nd Infantry Brigade Combat Team (IBCT), 2nd Infantry Division, to ensure the Soldiers were "kitted out" like infantry.

Resourcing the Firing Battery as an "Infantry Rifle Battery." The first challenge facing both firing batteries was restructuring from howitzer sections into infantry squads. The battalion staff contacted 4-320 FA, the unit it would be relieving in Baghdad, and studied its unit structure. The staff found that most units in Iraq were operating with four M1114 or M1151 gun-truck platoons, allowing for 20 personnel with all seats filled. The battalion began restructuring based on what it learned.

Section-integrity issues plagued both line-battery first sergeants as each established solid teams from his eight howitzer sections. The first sergeants reassigned section chiefs, gunners and ammunition-team chiefs to fill the rolls of squad leaders, team leaders, gunners, drivers and dismounts. Each firing battery split its two four-gun howitzer platoons into three platoons of four gun-trucks each (see figure, Page 14).

Now that the *Steel* batteries were organized into three minimally manned infantry platoons, albeit without the infantry platoon complement of 13-series forward observers, the next challenge was equipment. The brigade began an aggressive cross-leveling plan among the different battalions. Giving the Redlegs their portion of the infantry "kit" made lateral-property transfers a part of daily life.

As part of the transformation process from a Paladin unit to a 105-mm howitzer unit, the battalion exchanged its older M16A2 5.56-mm semiautomatic rifles for a pure fleet of M4 carbines with rail systems, complete with sights and "own-the-night" scopes to include PEQ-2 infrared target pointer/illuminator/aiming lights. The brigade successfully resourced the battalion with additional "maneuver unit" specific equipment, such as PAS-13 thermal weapon sights, short-barreled M-249 squad automatic weapons (SAWs), breaching tools, shotguns and several M147.62-mm sniper rifles, while also providing the training to go along with each new piece of equipment.

From "Talking the Talk" to "Walking the Walk." *Steel* started its infantry schooling in March with a series of weapons ranges. Several experienced 1-9 Infantry (IN) *Manchu* squad leaders conducted small-unit training with the Soldiers of the reconfigured *Steel* howitzer sections on close-quarters marksmanship, room clearing and basic movement techniques. More training followed in April when *Steel* conducted a combined field exercise with 1-9 IN at the Fort Carson, Colorado, live-fire military operations on urban terrain (MOUT) site. *Steel* had platoons integrated with 1-9 IN and also provided a firing platoon to integrate indirect fires for the training.

Manchu's field exercise established the bedrock infantry skills for the *Steel* battalion and began with team- and squad-level live fires. The squads were mixed in with the infantry platoons, and each section and team leader had the opportunity to take his Soldiers through the "shoot house" during both a day and night live fire.

While the squads trained, *Manchu* assembled both battalions' leadership, platoon sergeant and above, for what 1-9 IN called the "leader's live fire." This two-day event immersed the platoon and company leaders of both battalions in all aspects of urban warfare. *Steel's* battalion and battery leaders experienced everything its Soldiers were about to endure so that they would know "what right looks like." The 1-9 IN squad leaders took *Steel's* leaders through close-quarters marksmanship and team and squad live-fire room clearing then culminated with a day and night live-fire clearance of a company objective. Each *Steel* leader, assigned to one of the three platoons, executed all levels of planning and rehearsals for the exercise.

During this exercise, the FA officers and senior NCOs experienced everything first hand from a Soldiers' perspective rather than as a supervisor observing training. One battery commander, for example, was the number-two man in a four-man stack waiting to clear a house while a 1-9 IN first sergeant breached the door with a shotgun. The training built confidence in leaders, confirming that they could execute their nontraditional missions and train their Soldiers to standard.

The second week of the field exercise progressed to platoon-level clearing of objectives. Again, the firing battery squads were mixed in with the infantry platoons, and their platoon leaders and platoon sergeants were matched up with their respective infantry counterparts.

The platoons maneuvered onto the objective in their M1028 gun-trucks, established support by fire positions, dismounted and cleared an objective consisting of more than 30 rooms. Coached by some of *Manchu's* Military

Occupational Specialty (MOS) 13F Joint Fires Observers, one FA howitzer platoon and the infantry mortars provided indirect fires to seal the objective while F16s circled overhead and engaged deep targets. Once the objectives were secure, the platoons conducted sensitive-site exploitation (SSE) on key homes before exfiltration.

Training, dry and live iterations conducted both day and night, taught platoon members to bound forward by squads, maneuver mounted elements in support, call for fire and provide (simulated) casualty evacuation (CASEVAC).

Headquarters and Headquarters Battery (HHB). HHB also transitioned to prepare for the battalion's expected maneuver role. HHB's role included providing a tactical operations center (TOC) and administration and logistics operations center (ALOC), establishing a command and control node for the forward operating base (FOB) base defense operations cell (BDOC) and creating three maneuver platoons.

Restructuring the HHB. The initial structure for HHB consisted of one platoon to conduct military transition team (MiTT) security for an internally-filled MiTT outside of our battalion's area of operations (AO). This platoon eventually would come back to the battalion AO to augment *Steel's* habitual MiTT partners, ensuring they moved with a fourth gun-truck during day-to-day operations on the battlefield. For a short time, HHB also established two quick-reaction force (QRF) platoons that were given the additional task of patrolling around the FOB in a small AO to augment BDOC operations.

As the battlefield and mission requirements changed, HHB changed as well. One of the two original QRF platoons became the battalion QRF and an additional battalion AO patrol element when required, and the third platoon eventually became the commander's security detachment—all necessary for a maneuver mission in Operation Iraqi Freedom (OIF).

To accomplish the nonstandard missions, HHB pulled Soldiers from a wide array of low-density MOS including communication specialists and survey team members. From these low-density MOS and with support from the forward support company (FSC), G Company, HHB created the three maneuver platoons. HHB initiated the platoons by allocating newly arrived, combat-experienced MOS 13B Cannon Crewmembers into each platoon as the foundation—one per QRF platoon. The platoons consisted of personnel from the survey section, meteorological (Met) section, part of the S3 section and a selection of personnel from the FSC, such as mechanics, cooks and communication personnel.

To build the BDOC, HHB incorporated the distribution platoon leader, the field medical officer, an excess MOS 13Z FA Senior Sergeant, 13Bs who were limited in duty due to previous injuries, and 88M Motor Transport Operators from the FSC.

To establish the MiTT and the platoon that supported it, HHB pulled personnel from the S3 and S6 shops—more cooks and mechanics. Overall, 38 personnel were selected to source a battalion-provided, out-of-sector MiTT mission for the first few months of the deployment.

HHB Prepares for the Mission. HHB successfully incorporated the National Training Center (NTC), Fort Irwin, California, rotation as a rehearsal for operations in Iraq. The BDOC was responsible for the defense of FOB Detroit, which was a bare bones, dirt-constructed FOB in the central corridor. The BDOC was introduced to the Integrated Base Defense System of Systems (IBIDS) and had to track the different units providing security across the FOB. The HHB commander refined the initial base defense standing operating procedure (SOP) using a combination of an older version the battalion brought with them from its previous deployment to Ramadi and information obtained during its leader's reconnaissance in Iraq a month before NTC.

Advance Party Primes Mission Success. When HHB arrived in Iraq, the battery fell in on an operational set that stretched its property book across five separate FOBs. Property accountability is a major challenge for any HHB over such a large area. A large part of HHB's success in Iraq came from sending the HHB commander forward with the advance party from Kuwait to Iraq giving him additional time to inventory all the property because it was located in so many different locations.

SGT Rommel Soriano from Bravo Battery, 2nd Battalion, 17th Field Artillery (B/2-17 FA), 2nd Brigade Combat Team (2 BCT), 2nd Infantry Division (2 ID), provides security during a patrol in the Zafaraniyah area of east Baghdad, Iraq, on 8 June 2007. (Photo by SSgt Bronco Suzuki, USAF, 982nd Combat Camera Company)

The commander and supply sergeant maneuvered around the battlefield taking inventories before the main body's arrival. This was critical to the battery's successful relief in place (RIP) because the leadership was able to focus on the mission rather than property inventory. Once the main body arrived and HHB began the actual RIP, the commander focused his platoons on the tasks of learning about the area and people. The early arrival of the commander and advance party in the AO played a big role in the success of the RIP process and is a recommended tactics, technique and procedure (TTP) for follow-on HHB commanders.

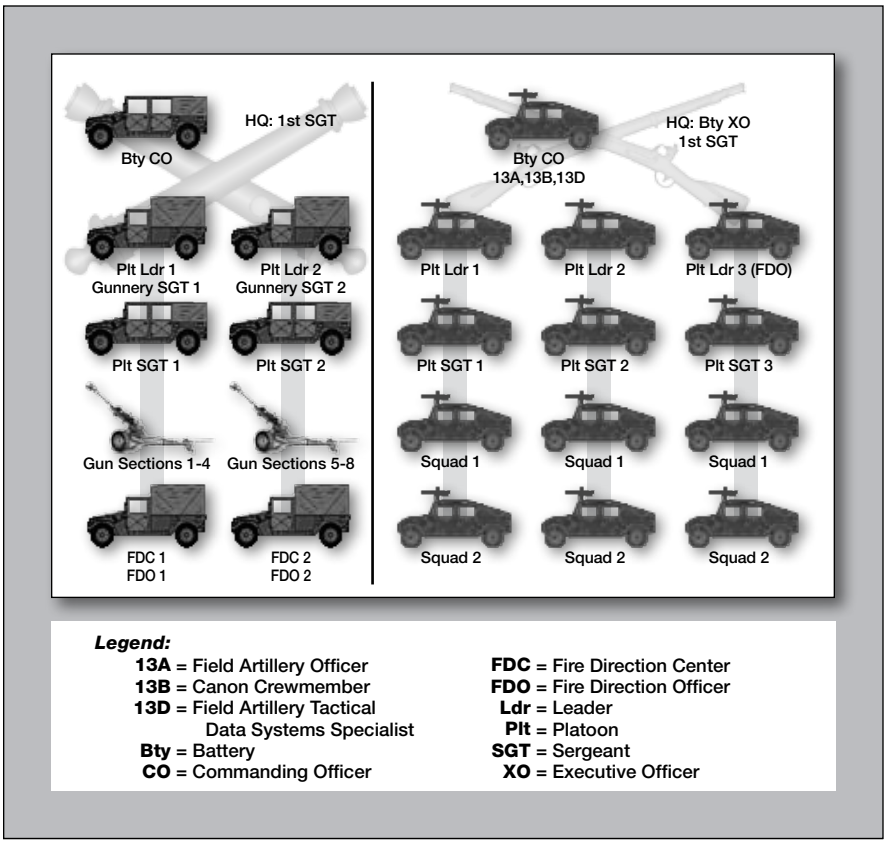
Recommendations from an HHB Commander. The commander must be willing to commit every possible Soldier to the fight. The commander should look across his formation and determine who can make an immediate impact and is also a strong leader. Once these Soldiers are identified, their training should focus on key tasks that they can perform in a variety of ways. Due to the amount of tasks assigned, HHB needs additional personnel, which we accomplished by pulling personnel from the FSC. The keys are flexibility and mission accomplishment.

FSC. The FSC supports the battalion, fulfilling assigned tasks no matter what the mission is—supporting the Internet cafe, the security detachment, QRF, gate guard or FOB defense; the FOB mayor cell or FOB maintenance and distribution; augmenting personnel for dining facility operations; or managing a battalion asset, such as a battalion forklift.

G FSC Prepares for the Mission. G FSC has three organic platoons by the modified table of organization equipment (MTOE)—headquarters, distribution and maintenance.

Before deploying, all three platoons completed individual and crew-served weapons training, the convoy-skills trainer, and the improvised explosive device lane training. The maintenance platoon also conducted recovery drills in the field and, together with the distribution platoon, established a recovery team with one M984 heavy expanded-mobility tactical truck (HEMMT) wrecker and two M1074 palletized loading system (PLS) trucks.

All of G FSC's platoons were kept busy. The distribution platoon drew, transported and turned in ammunition, supporting numerous small-arms ranges and live-fire artillery exercises while the FA firing batteries conducted training and certification on the howitzers.



Resourcing the Firing Battery as an "Infantry Rifle Battery."

The maintenance platoon kept the battalion's vehicles on the road and developed specialty-maintenance repair shops, including an electronics maintenance shop. The maintenance platoon developed a refit program for the battery's vehicles allowing a mechanic to thoroughly inspect the platoon's vehicles after each patrol. Deficiencies were repaired on the spot, and necessary parts were ordered immediately.

Even the platoons' cooks were an integral part of the FSC, although it was difficult to include them in training events.

During battalion and brigade train-up exercises, G FSC provided Soldiers to perform or help with a myriad of tasks and missions and learned to "do more with less." The FSC was stretched to its limits with too many tasks and not enough personnel.

The training exercises paid off when G FSC deployed—the commander knew exactly how many Soldiers were needed to run a solid maintenance refit program, manage a distribution section and provide command and control to support each nonstandard mission, always ensuring the maneuver units were never at a loss or distracted.

Recommendations from a G FSC Commander. Commanders must ensure Soldiers are qualified on crew-served weapons, enabling them to man either gun-trucks—nine G FSC Soldiers are on the QRF—or larger supply or cargo trucks.

The FSC should deploy with as many 10-ton jacks as possible; they are used routinely and break down over time. Units must bring at least one forklift. A 4,000-pound forklift will work, but a 10,000-pound forklift is optimal; one of each is ideal especially if one of the forklifts is equipped with variable reach. Our battalion fell in on a 10,000-pound forklift in Iraq, and G FSC became the FOB manager for this coveted resource.

Lethal and Nonlethal Effects. The battalion commander's guidance was simple: maximize nonlethal effects and enablers. To prepare for combat operations, *Steel* formed an effects cell consisting of the battalion fire direction officer (FDO), who also served as the battalion fire support officer (FSO); the G FSC maintenance control officer, who also served as the battalion civil-military operations (CMO) officer; and the battalion fire direction NCO-in-charge

(NCOIC), who also served as the CMO NCOIC. (It is important to mention that the battalion fire direction officer and fire direction NCO also executed their fire direction duties for the first four months of the deployment).

The FDO assumed the role of effects coordinator (ECOORD) for the battalion and incorporated all the enablers assigned to *Steel* Battalion. *Steel* added a civil-affairs team–A (CAT-A), a tactical psychological operations (PSYOP) team (TPT) and routine media embeds to its numbers. The ECOORD provided all of the coordination and synchronization for these assets within the daily maneuver mission. The ECOORD also performed the duties of the traditional maneuver battalion FSO, except without the help of company FSOs, NCOs and forward observers (FOs) associated with a traditional maneuver battalion.

To compensate, *Steel* sent one firing battery lieutenant to the Joint Fires Observer Course (authorized for 13F or 13A [Field Artillery Officer] personnel) and conducted additional training with joint terminal air controllers (JTAC) at Fort Carson. JTACs currently are not sourced to FA battalions operating in a maneuver role, so the majority of *Steel*'s air reconnaissance missions were sourced by AH-64s with the JFO-trained lieutenants providing the air-to-ground coordination. Occasionally, the battalion received fixed-wing support. For the battalion to use fixed-wing aircraft, a JTAC controlled the aircraft from the brigade TOC and relayed the pilot's message to the battalion via secure voice over Internet protocol (SVoIP) or FM communications.

Maximizing all enablers, including integrating the Iraqi Security Forces (ISF), is a critical requirement for a FA battalion with a maneuver mission, especially with available troop-to-task. Each Iraqi patrol and gun-truck enabler provides additional combat power to a battalion with less than half the troop strength of a traditional maneuver unit. To dominate an operational environment and provide a constant community presence, integration and synchronization of all assets is the solution.

The *Steel* Battalion's hard work and training paid dividends upon its arrival in Iraq. With the introduction of the Baghdad Security Plan in January 2007, the *Steel* Battalion received control of the Karada Security District, one of 10 newly formed Baghdad security districts.

With less than half the troop strength of a normal maneuver battalion, controlling an area of roughly 25 square miles inhabited by more than 200,000 nationals, the Soldiers, NCOs and officers of the *Steel* Battalion are getting the job done. In line with their goals, *Steel* established a combat outpost and a joint security station within the community of Zafaraniya to integrate with their Iraqi partners better, specifically the 1st Battalion, 4th Brigade, 1st Iraqi Division (1/4/1 Iraqi Army), the Zafaraniya station police and the Mada'in Patrol Police, as well as various neighborhood council leaders.

Today, *Steel* Soldiers lead the way within the *Strike* Brigade in many "infantry-specific" tasks and work closely with their Iraqi partners to bring a future peace to an otherwise troubled region.

Soldiers assigned to B/2-17FA, 2 BCT, 2 ID, conduct a patrol through a neighborhood in the Zafaraniyah area of east Baghdad, Iraq, 7 April. (Photo by SSgt Bronco Suzuki, USAF, 982nd Combat Camera Company)

Captain David K. Smith, Field Artillery (FA), is the Commander of A Battery, 2nd Battalion, 17th Field Artillery (A/2-17 FA), 2nd Infantry Brigade Combat Team (IBCT), 2nd Infantry Division, deployed to Baghdad, Iraq in support of Operation Iraqi Freedom (OIF). He also served as Battalion Fire Direction Officer (FDO) for 2-17 FA, and Battalion Fire Support Officer (FSO) for 2-9 Infantry, 2nd Infantry Division, Camp Casey, Korea.

Captain David W. Eastburn, FA, was the Commander of B/2-17 FA at the time this article was written and deployed in support of OIF. He also served as the Battalion FSO, 1-503 Infantry (IN) (later re-flagged to 1-9 IN), 2 IBCT, 2nd Infantry Division, at Fort Carson, Colorado.

Captain William H. Snook, FA, is the Commander of Headquarters and Headquarters Battery (HHB)/2-17 FA. He also served as the Commander of A/2-17 FA; Battalion FSO for 1-503 IN (Air Assault), deploying in support of OIF; and Assistant S3 for 2-17 FA.

Captain Stephen D. Poe, FA, is the Commander of G Forward Support Company (FSC), 2-17 FA. He also has served as the Commander of Service Battery, Battalion FDO and S4 for 2-17 FA.

Captain Steven R. Simmons, FA, is the Battalion FDO and FSO for 2-17 FA. He also served as a Troop FSO for 3-61 Cavalry, and deployed in support of OIF with 2-17th FA from Korea, serving as Executive Officer and a Platoon Leader during the deployment.

Major Christopher W. Wendland is the Executive Officer for 2-17 FA. He also has served as the Fires and Effects Coordinator for 2 IBCT, 2nd Infantry Division. He commanded HHB, 41st FA, V Corps, in OIF I, as well as B/1-27 FA (MLRS) in Germany.

MOS 14J: Effecting Change Where Change is Needed

By Sergeant Major Scott R. Wilmot, ADA

While the Army is transforming and fighting the War on Terrorism (WOT), Air Defense Artillery (ADA) also is transforming and restructuring to meet today's demands. Though there are many changes occurring during this process, this article addresses issues centric to Military Occupational Specialty (MOS) 14J ADA Command, Control, Communications, Computers and Intelligence (C^4I) Tactical Operations Center (TOC) Enhanced Operator/Maintainer. The incredible number of critical tasks, the ever-changing system-specific expertise required from one assignment to the next, retraining and an unbalanced promotion pyramid are issues for this MOS that deserve the attention of the ADA community.

The MOS 14J Soldiers and the officers who lead and depend upon them should know that the ADA School and leaders are paying attention. The staffs of the ADA School directorates are working together to resolve the issues, sustain a healthy force and offer better career opportunities, not only for MOS 14J Soldiers, but for all current and future ADA Soldiers. The ADA School's mission is to ensure the ADA force is manned by trained, healthy and competent Soldiers. The plan is to scrutinize all ADA MOS, identify similar problems and find solutions.

Identifying MOS 14J Issues. The 2007 career management field personnel quarterly reports provided by the Human Resources Command reflected an above-Army-average attrition rate for 14J Soldiers. Sensing surveys and interviews indicated 14J Soldiers suffer from low morale. Senior leaders reported that 14J Soldiers arrived at units without the required training for that particular unit's mission. A training and effectiveness analysis also determined that the number of MOS 14J critical tasks is too high for Soldiers to execute competently without overtaxing them.

An ADA School review team determined that the MOS 14J task load directly contributes to low morale and high attrition. The same review team determined that 14J Soldiers do not receive assignment-oriented training, which means Soldiers arrive at a unit without specific required skills. Both of these factors add another level of frustration to an already "stretched-to-the-limit" Soldier.

As it stands now, an MOS 14J Soldier may serve as a Sentinel radar operator/maintainer for three years, advance in rank to a staff sergeant and then, on his next permanent change of station (PCS), be assigned to a Patriot battalion. Under this design, that staff sergeant requires retraining for that particular skill set. Why? MOS 14J Soldiers are assigned to many diverse missions, in various types of units and on multiple types of systems including Sentinel with sensor nodes, air battle management operations center (ABMOC), tactical control/communications systems (TCS), battery command post (CP), and brigade and higher command and control. It is unreasonable to expect Soldiers to perform proficiently without retraining on systems they might never have seen or worked with. Even if the Soldier is resourceful, his keeping up with all the possible units' functionalities borders on impossible.

While the MOS 14J Soldiers are being retrained on different systems with each reassignment, Soldiers with other MOS do not need retraining. For example, MOS 14T Patriot Launching Station Enhanced Operator/Maintainer Soldiers serve in a Patriot unit for three years and, usually, PCS to another Patriot unit that uses the same skill sets as their previous assignments.

MOS 14J has grown beyond its intended scope, and the load placed on our Soldiers is exorbitant.

Determining the "Way Ahead." After examining multiple courses of action (COAs), the review team recommended a division of the 14J MOS into three separate MOS. This division distributes the critical tasks and aligns MOS logically into distinct career tracks, thus ensuring Soldiers have requisite training. This COA postures MOS 14J and other ADA MOS for the future.

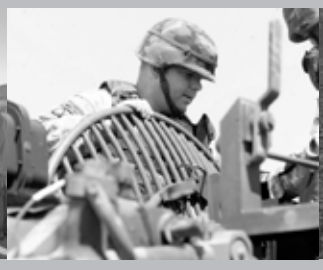
This initiative, called the "MOS 14J Way Ahead," currently is in the feasibility staffing process. The initiative focuses on three distinct areas.

Relieving Critical Task Loads. Currently, MOS 14J has 191 career-critical tasks, and these do not include tasks associated with the Counter-Rocket, -Artillery and -Mortar (C-RAM), Ground-Based Midcourse Defense (GMD) or Forward-Based X-Band-Transportable (FBX-T) radar systems.

The proposal to split MOS 14J into three distinct MOS (14J, 14G and 14H) would divide the areas of expertise. MOS 14J Soldiers would perform duties associated with Forward Area Air Defense (FAAD), Sentinel and Air and Missile Defense (AMD) Workstation (AMDWS) assignments consisting of 112 tasks. MOS 14G Soldiers would be assigned to air defense airspace management (ADAM) cells, brigade and above, with 145 tasks. And 14H Soldiers would execute duties associated with Patriot, Terminal High-Altitude Area Defense (THAAD) and Space assignments with 144 tasks.

Ensuring Properly Trained Soldiers. The three individual MOS focus on assignment training. Soldiers would arrive at their new assignments fully trained, alleviating the need for "on-the-job" training time and funds. The additional



SGT Shyla Reno, an MOS 14J Soldier in the 69th Air Defense Artillery's (ADA) Joint Operations Center, announces a simulated inbound tactical ballistic missile during Exercise Juniper Cobra 2007. (Photo by SSG John Queen, 69th ADA Brigade Public Affairs)

skill identifier (ASI) Q3 tasks will be divided between MOS 14G and 14H, thereby ensuring that Patriot Soldiers arrive to their units trained.

Enabling Critical Task Performance. The three MOS identify succinct career paths and critical tasks eliminating the current bottleneck at the staff sergeant level. This also allows for these Soldiers to be competitive for promotion beyond the staff sergeant level.

This initiative is still in the proposal stage. Once approved, the timeline for full implementation is approximately five years.

Working for You. The Office, Chief of ADA (OCADA); Directorate of Training, Doctrine and Leader Development (DOTD-LD); and Directorate of Combat Developments (DCD) work together and play key roles in the proposed MOS 14J restructure. This group effort ensures that proposed fixes do not cause a domino effect, creating undesirable second- and third-order effects elsewhere.

OCADA. The clearinghouse and official point of contact (POC) for ADA personnel proponent issues is the Personnel Proponent Division (PPD) of OCADA. When issues or concerns surface that center on proponent topics, ADA career managers gather and evaluate data, coordinate actions and recommend life-cycle management function policies, within the guidelines of *Army Regulation (AR) 600-3 The Army Personnel Proponent System,* for ADA active Army and Reserve Component (RC) officers, warrant officers, NCOs and enlisted forces.

MOS restructure is not the only issue OCADA is working. OCADA also tracks special skills such as skill identifiers (SIs), ASIs and special qualification identifiers (SQIs)—important in a branch as complex and technical as ADA.

OCADA has submitted a military occupational classification and structure (MOCS) proposal for review and approval to Training and Doctrine Command (TRADOC), requesting the award of ASI Q4 to the warrant officer Area of Concentration 140A Command and Control Systems Technician and MOS 14J Soldiers assigned to a Joint Tactical Ground Station (JTAGS) position. Once approved, manning documentation will be changed to reflect those positions in the JTAGS elements coded with an ASI Q4. Successful completion of JTAGS training, with a follow-on assignment in a JTAGS-coded position, will justify the award of the ASI.

The MOCS process takes approximately three years. Once approved and implemented, qualified Soldiers and their chain of command will be responsible for requesting the ASI by submitting the Department of the Army (DA) Form 4187 Personnel Action. This holds true even if the position they hold on the manning document is coded with a Q4 ASI.

OCADA also is involved in a comprehensive TRADOC review of all ASIs, AIs and SQIs required by all positions and line numbers on our manning documents. Finalization of this initiative is expected in March 2009. During the review, additional requirements for specific positions based on lessons learned can be recommended. For example, if a brigade S3 only has one of three staff sergeant positions requiring the 2S ASI for battle staff, and our real-world requirement shows that two require the 2S ASI, then we can request and justify the additional coding. The reverse is also true. If you have too many ASIs, SIs and SQIs that are deemed no longer required, then a request for removal will be submitted.

Additionally, OCADA periodically sends outreach teams to unit locations with the intent of keeping leaders and Soldiers informed, answering questions, identifying potential future problem areas and initiating fixes.

DOTD-LD. DOTD-LD's goal is to produce training products that enable Soldiers to perform their roles in support of the units' missions. To meet this goal, the DOTD-LD training developers are producing three course administrative data programs for proposed MOS 14J, 14G and 14H. Although the MOS have yet to be named, this documentation is part of the MOCS proposal package OCADA must submit to have the MOS restructure approved.

Even though the restructure is not approved, the DOTD-LD training developers also must produce all of the training products that support instructional and distance learning. These products are used to train in the schoolhouse, at the units and by the National Guard Regional Training Institute.

DOTD-LD must produce the programs of instruction (POIs) and training support packages (TSPs), Soldier training plans, drills and combined arms training strategies. These products are used by the 6th ADA Brigade (Training) for the pilot courses before approved MOS training is implemented.

To accomplish this task, DOTD-LD must work closely with the units in the field, the 6th ADA Brigade and all who provide lessons learned. This action takes approximately two years. During this time, there is a constant change in both training products and the implementation of training. Unfortunately, until the process is complete, unit commanders will continue to receive Soldiers who require retraining.

When the process is complete, units will receive Soldiers more quickly who will meet both their specific initial training

requirements and the intent of the ADA School's goal—to produce highly trained and skilled Soldiers. The restructure also will facilitate career progression and enable ADA Soldiers to stay in one career field, if they wish, or to take another direction, because the proposal offers these Soldiers new options.

DCD. DCD is *Where the Future Begins*. The development of concepts, analysis of alternatives, determination of requirements and force design introduces doctrine-based AMD organizations to meet Army modularity and AMD transformation objectives.

In concert with the ADA School and doctrine, organizations, training, materiel, leadership and education, personnel, and facilities (DOTMLPF) agencies, DCD develops force design updates to make changes to approved AMD force structure that meet branch, Army and joint forces doctrine. Additionally, DCD force design analysts conduct reviews of AMD and non-AMD tables of organization and equipment (TOEs) to ensure accurate applications are made to personnel and equipment requirements. Routine updates to personnel and equipment are applied through basis of issue plans and incremental change packages.

Minor changes can be accomplished through an administrative change request process. These actions reflect DCD's support in meeting the needs of the future Army.

Achieving the Ongoing Mission. The Army must ensure its Soldiers are trained properly to accomplish today's missions without overstressing the Soldiers with too many tasks. By reviewing ADA documentation and making changes where needed, the ADA staff and school are taking the first step. ADA must identify current MOS, evaluate how they align with future systems and balance them. To do that effectively, MOS must align to handle not only today's systems more effectively, but also future capabilities and growth. As new systems come online, ADA's future will require decisions on which MOS most closely align with new equipment. Realigning our task loads by MOS today will help the leaders of tomorrow designate the right MOS for the right job.

ADA expects to activate two more Patriot battalions and two THAAD batteries. With this growth and the fielding of future systems, our current and future ADA Soldiers face new and exciting opportunities.

Sergeant Major Scott R. Wilmot is the Air Defense Artillery (ADA) Proponent Sergeant Major for Office, Chief of ADA (OCADA) at the ADA School at Fort Bliss, Texas. He recently graduated with honors from the US Army Sergeants Major Academy and served as the Deputy Commandant of the NCO Academy (NCOA); the Operations Sergeant Major for the 3rd Battalion, 43rd ADA (P) (3-43 ADA); and the Brigade Operations Sergeant Major for the 11th ADA Brigade, all at Fort Bliss. He also was the First Sergeant of Headquarters and Headquarters Battery (HHB), 1-43 ADA, 6th Cavalry Brigade at Suwon Air Base, Korea, and the Detachment First Sergeant, Office of the Secretary of Defense (OSD)-Joint Cruise Missile Defense at Elgin Air Force Base, Florida.

MiTT: A View from the Driver's Seat

Air Defenders looking for the next challenge may want to join a military transition team (MiTT). I found both challenges and opportunities not found in traditional air and missile defense (AMD) assignments as the NCO-in-charge (NCOIC) of the 3rd Battalion, 4th Brigade, 2nd Division, Iraqi Army (IA) MiTT between March 2006 and March 2007 in Mosul, Iraq.

MiTTs are small teams, usually 10 to 12 people, embedded with Iraqi or Afghan forces that act as advisors and trainers. MiTTs are formed with active and Reserve Component Soldiers and Marines from different branches with diverse military occupational specialties (MOS).

Challenges and Opportunities. A challenge for some team members is grasping the MiTT's "small-team concept" with its main focus on team effort rather than individual effort. It doesn't take too many missions for a solid team to form.

Each team member must be versatile and proficient. Any member may be called upon at a moment's notice to perform as a driver, gunner or truck commander during a mission. Proficiency extends to all of the equipment including the Blue Force Tracker (BFT)/Force XXI Battle Command, Brigade-and-Below (FBCB^2) and the Counter Remote-Control Improvised Explosive Device (IED) Electronic Warfare (CREW) systems.

Another challenge was going to war with Soldiers with whom we trained for just 40 days—some members felt they were putting their lives in the hands of 10 strangers. MiTT training now allows team members time to get to know those they will be relying upon.

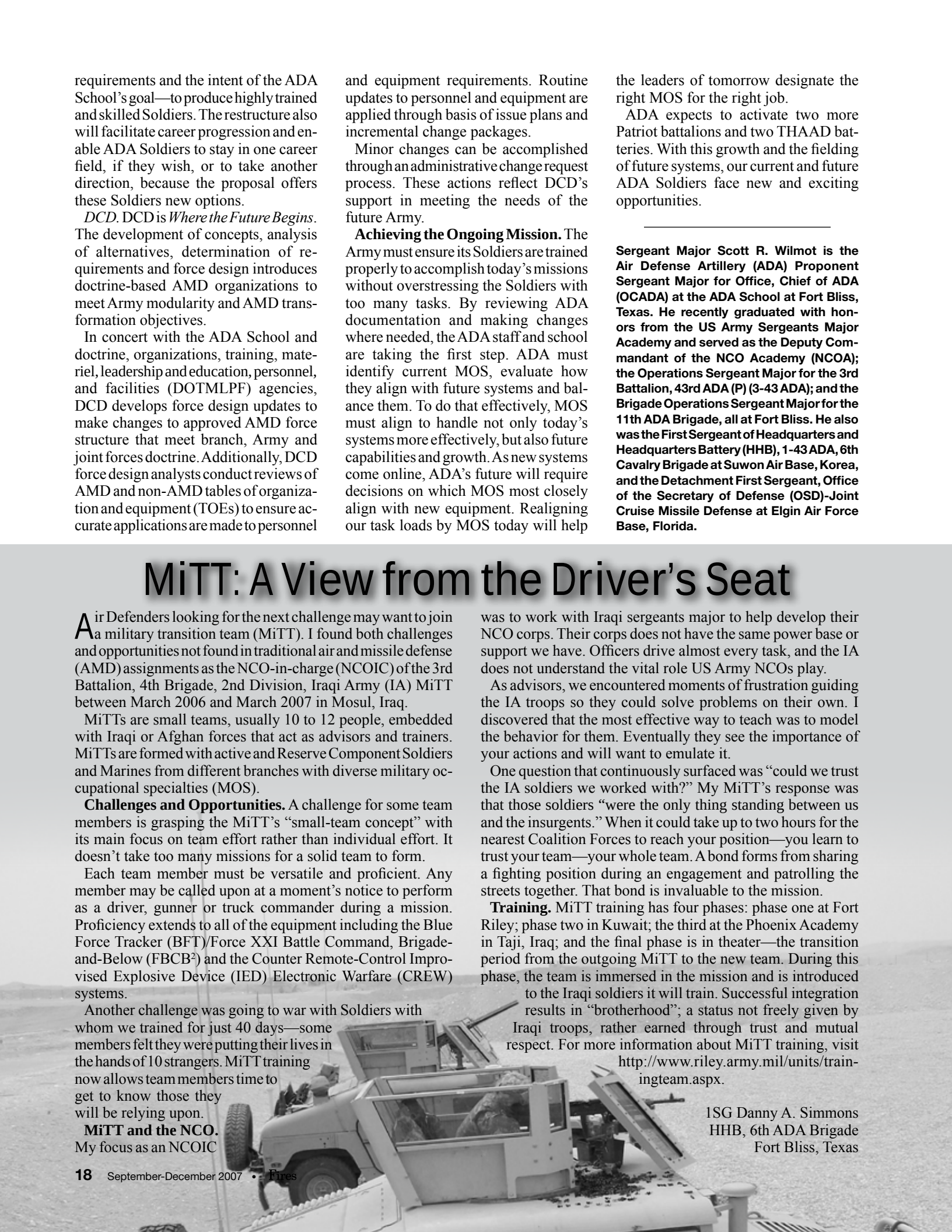
MiTT and the NCO. My focus as an NCOIC was to work with Iraqi sergeants major to help develop their NCO corps. Their corps does not have the same power base or support we have. Officers drive almost every task, and the IA does not understand the vital role US Army NCOs play.

As advisors, we encountered moments of frustration guiding the IA troops so they could solve problems on their own. I discovered that the most effective way to teach was to model the behavior for them. Eventually they see the importance of your actions and will want to emulate it.

One question that continuously surfaced was "could we trust the IA soldiers we worked with?" My MiTT's response was that those soldiers "were the only thing standing between us and the insurgents." When it could take up to two hours for the nearest Coalition Forces to reach your position—you learn to trust your team—your whole team. A bond forms from sharing a fighting position during an engagement and patrolling the streets together. That bond is invaluable to the mission.

Training. MiTT training has four phases: phase one at Fort Riley; phase two in Kuwait; the third at the Phoenix Academy in Taji, Iraq; and the final phase is in theater—the transition period from the outgoing MiTT to the new team. During this phase, the team is immersed in the mission and is introduced to the Iraqi soldiers it will train. Successful integration results in "brotherhood"; a status not freely given by Iraqi troops, rather earned through trust and mutual respect. For more information about MiTT training, visit http://www.riley.army.mil/units/trainingteam.aspx.

1SG Danny A. Simmons
HHB, 6th ADA Brigade
Fort Bliss, Texas



An F-16CG Fighting Falcon from the 421st Expeditionary Fighter Squadron, Balad Air Base, Iraq, flies over central Iraq. (Photo by MSgt. Lance Cheung, USAF)

One Team, One Fight—the GLO

By Captain Todd T. Haley, FA

1700Z 24 November 2006, Balad Air Base Iraq. In a small room not much bigger than a walk-in closet, four servicemen conduct the last-minute arrangements necessary to launch two F16s and their crews into the skies of Iraq. Inside the cramped confines of the tiny room, the Air Force intelligence officer, Army ground liaison officer (GLO) and two pilots conduct the pre-mission briefing. This is the last opportunity for everyone to "get on the same sheet of music."

In Army terms, this briefing represents the operations order (OPORD) briefing, rock drill and rehearsal. The pre-mission briefing is where it all comes together, and it all happens less than an hour before the crews step to the aircraft.

For now, the pilots sit at a small desk pouring over a stack of paperwork, absorbing the intelligence officer's message and focusing on the call signs and frequencies of everyone from the joint terminal attack controllers (JTACs) to the other aircraft that will share their airspace.

This night's flight will take the F16s across Iraq. The two pilots will support the Army, Marines, Special Operations, and Coalition Forces engaged in many different types of ground operation. The pilots will support various operations, including supply convoys, cordon and searches and nontraditional intelligence, surveillance and reconnaissance (ISR) operations.

The pilots will spend four hours in the air, conduct four in-flight refuelings and return to base where they will spend the final moments of their flight participating in the Balad Air Base defense plan. During their flight, they can expect to conduct multiple shows-of-force, track insurgents trying to escape ground forces, locate improvised explosive devices (IEDs) along convoy routes and, as always is the case, be prepared to employ weapons in support of troops-in-contact (TIC).

While the graphics, maps and papers are sorted and folded into a manageable format for use inside the cramped cockpit, the intelligence officer provides the pilots the latest threat update and a recap of what has happened since their last flight. Meanwhile, the pilots' attention remains split between trying to figure out where the refueling tankers will be, where their mission will take them, how to get there and what airspace they will need to support their assigned tasking. At this point in the briefing, they have no information, beyond the joint tactical air strike request, about what the ground forces are doing or what the ground commander wants them to do when they get there.

The dissemination of that information is left to the GLO during his portion of the pre-mission briefing. Present at every briefing, 24 hours a day, seven days a week, the GLO provides up-to-the-minute information on ground force operations and air support requirements and answers to the pilots' questions. The GLO's briefing gives the pilots the information necessary to support each joint tactical air strike request and the maneuver forces who submitted them. The GLO relays the ground commander's intent for close air support (CAS) as well as provides a better understanding of how each unit is equipped and operates.

The pilots know that the GLO understands what both they and the maneuver commander need to succeed. The GLO speaks the "two languages" and can translate the critical information for those who need it most. The GLO briefing epitomizes the "One Team, One Fight" concept and bridges the gap between the ground forces and the aircrews who support them.

This article looks at how GLOs are established and what they do for the Air Force and the Army.

Establishing GLOs. GLOs and ground liaison detachments (GLDs—a two-man team consisting of a GLO and a senior NCO) have been around for many years. The same memorandum of agreement (MOA) that sends air liaison officers (ALOs) and JTACs to the Army sends GLOs and GLDs to the Air Force.

Manning. Active duty GLOs have been

fielded to selected Air Force tactical fighter and bomber units, air mobility command (AMC) units and at overseas Air Force wings for many years. The GLDs typically are assigned to an Army corps or battlefield coordination detachment (BCD) with duty at the supported air base. Officers are captains or majors at the wing level with lieutenant colonels at the numbered Air Force level. NCOs are sergeants first class or master sergeants.

In addition to the active duty GLO manning, Reserve Component (RC) drilling individual mobilized augmentee (DIMA) officers are assigned to Forces Command (FORSCOM) with duty at their supported Air Force wings. DIMA GLOs support the fighter and bomber wings that are a part of Air Combat Command (ACC), headquartered at Langley Air Force Base (AFB) in Virginia. These DIMA GLOs are managed by FORSCOM's G3 and serve their wings by drilling with the Air Force and, when needed, mobilize to train and (or) deploy with their wings or squadrons from those wings.

The Army National Guard (ARNG) also maintains GLDs that can be mobilized and deployed to support 24-hour operations in a theater of operations.

No matter the duty status, the *job* remains the same and all GLOs receive the same training. The biggest differences for GLOs are in the units they support. Each wing is unique, based on the capabilities and limitations of the aircraft, making each GLO experience just as unique.

This mixture of active and Reserve GLO manning has been put to the test in the last few years as detachments and individual GLOs have supported the War on Terrorism (WOT). The limited number of qualified GLOs available to support the Air Force's increased operational tempo (OPTEMPO) has put a strain on the GLO program. The increased OPTEMPO coupled with the successful integration of GLOs into combat operations has led the Air Force to request GLOs be in every operational wing. To meet that requirement, the Army is in the process of increasing active duty GLO manning to field GLDs at selected Air Force fighter, bomber and reconnaissance wings.

In fact, the term GLD has been expanded. GLDs will serve with fighter and bomber units, reconnaissance liaison detachments (RLDs) will serve with Air Force predator units and air mobility liaison officers (AMLOs) will serve with air mobility units. The Army is realigning the detachments with the Army service component commands (ASCCs) and establishing a training, readiness and oversight (TRO) responsibility for the teams with the BCDs, on a geographic basis. This will put the teams working for a higher-headquarters liaison organization in the same air-ground business as the GLDs, RLOs and AMLOs. Regardless of the alignment and TRO relationships, the teams still will deploy with their assigned Air Force unit and then "plug into" the BCD supporting the team's assigned area of operations (AO).

Training. Once selected for a GLO position, the individual attends the Joint Firepower Course (JFC) at Nellis AFB, Nevada. JFC covers the Theater Air Ground System (TAGS) and provides a "once-over-the-world" of all things related to Army, Air Force, Navy and Marines CAS. JFC focuses on CAS doctrine and provides the framework to understand, plan and execute CAS missions. After attending JFC, GLOs may spend a few days working with other GLOs to focus on what the Air Force and Army expect from their liaisons. The Joint and Combined Integration Directorate (JACI), Fort Sill, Oklahoma, and the Joint Air-Ground Operation Group (JAGOG), Nellis AFB, are working to enhance and update the GLO Qualification Course (GLOQC) at Nellis AFB. (The GLOQC runs concurrently with JFC.) The enhanced GLOQC will train new detachments to be effective liaisons. The new course will feature lessons learned from GLOs in the field and will focus on training GLOs better for their missions.

Working for the Air Force and Army. Many Air Force wings and squadrons never have had GLOs. Some may be familiar with GLOs they have encountered while deployed, but most have not had the luxury of having their own ground representative assigned. The overriding expectation is that the GLO will be the Air Force commander's subject matter expert (SME) on ground operations. The GLO has a lot of latitude in operating on a daily basis to meet his commander's expectations, allowing him to tailor his support to his unit's maximum benefit.

Duties and Responsibilities. The GLO is the wing's primary advisor on Army doctrine, organization, operations, tactics, procedures and equipment. The GLO is responsible for coordinating with ground units during combat operations and helping the Air Force intelligence sections conduct intelligence preparation of the battlefield (IPB). During peacetime, the GLO helps his assigned flying unit coordinate, plan and execute CAS training.

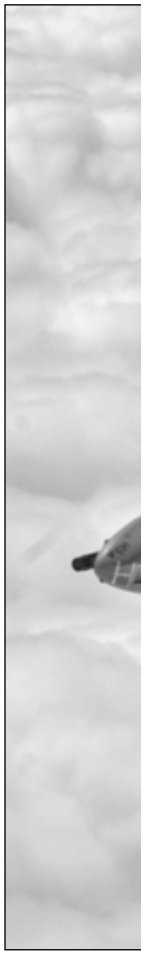
Skill Sets. Working as the only Army representative in an Air Force world can be a challenging experience. GLOs may find themselves acting as teachers, mentors, students and SMEs. The work typically is done "behind the scenes" and without a lot of direction. The abilities to be self-sufficient and self-motivated are two key characteristics of a GLO.

No one can expect the GLO to have all the answers but, when it comes to ground operations, he is the "go-to guy" for the Air Force and must be prepared to answer all questions. Whether he is researching administrative procedures or tracking down tactical information, the GLO's ability to find answers and "think outside the box" is critical to his success.

GLOs must enter the Air Force world and be flexible and resourceful enough to work within the different systems of the joint world to accomplish his mission. Arriving at a new base, the new liaison may have to establish a new office and (or) the communications network necessary to pull information from the supported ground units. The ability to establish that he understands the Air Force's organizational architecture and operational structure allows the GLO to create a positive working environment.

GLO Deployment. The Air Force trains and deploys under the Air Expeditionary Force (AEF) concept. The AEF concept has the flexibility to supply fighting forces to global combat operations and maintain aircraft and personnel readiness via a modular force structure.

For example, the 332 Air Expeditionary Wing (332 AEW) currently is at Balad Air Base, Iraq. The 332 AEW provides command and control of Air Force assets assigned to support Operation Iraqi Freedom (OIF)—and has since 2004. The wing and command structure remain in place while squadrons and wing personnel are rotated in and out under that wing. This modular approach to command and control allows the wing's operational architecture to support multiple aircraft types and missions without changing the framework of the wing. The only thing that changes is the personnel and aircraft, allowing for easy transitions between incoming and outgoing units.



To provide continuity in this modular approach, many of the wing's command and staff positions are required to remain in place for a year while subordinate units (flying squadrons) conduct a handover every four to six months. This approach is very different from the Army's 12 to 15-month "boots on the ground" approach where entire units are rotated in and out of the fight. Under this AEF concept, the GLO can expect to deploy with one of the expeditionary squadrons for a four- to six-month rotation and (or) be deployed to support the AEW for a year.

Comparing Air Force Structure to Army Organization. The Air Force's structure differs from the Army's organization. The GLO's ability to correlate Army doctrine and structure with the Air Force's will smooth his transition.

The Air Force wing can be compared best to an Army brigade. The wing can be made up of any number of squadrons and can include squadrons that not only fly, but also support flying operations. A wing may have only one type of aircraft stateside, but as an AEW it may have multiple types. The same jobs and tasks that organize Army brigade staffs can be found in the wing, including all of the S1, S2, S3 and S4 functionalities under Air Force names.

Typically wings are commanded by a colonel. (In some instances, a one-star general commands a wing.) Air Force fighter and bomber squadrons can be related best to a maneuver battalion. The squadron is commanded by a lieutenant colonel and the "staff" includes a dedicated intelligence section. Squadrons can deploy to and support an AEF cycle becoming a part of that AEW by adding "expeditionary" to their squadron designation.

Within the squadron are "flights" which can be compared best to companies or batteries. Each flight has a commander who is typically a major or a senior captain.

Understanding and being able to relate the Air Force organization to Army terms will help the GLO understand the roles and responsibilities of the Airmen with whom he is working. The names and titles will be different, but the core organization and concepts remain the same.

Working with Peers. The fighting force inside the Air Force has more officers than the Army. In the Army, the fighting force is mostly Soldiers and NCOs. The officer-to-enlisted ratio in the Army is vastly different from what is found in an Air Force combat unit, and GLOs spend most of their time working with other officers.

If you were to compare a howitzer crew to a combat aircraft crew, the gun crew is made up of all enlisted personnel while the crew of a B1 bomber is made up of all officers. Officers fly the planes and drop the bombs. Therefore, fighter and bomber squadrons are heavy on officers, and it is not unusual to see colonels and even generals flying combat missions.

The enlisted members of the wing or squadron typically are highly specialized in their particular fields and are respected for their knowledge and abilities. That is why it is not uncommon or unusual to see junior enlisted personnel briefing senior officers. As a GLO, it is important to recognize these cultural differences and be able to work within that new environment.

Working with the "Patch." In a combat aircraft unit, the GLOs should be assigned to the wing weapons section. The wing weapons section is where you will find the "top gun" or, in "Army speak," the "master gunner" of the wing. Weapons officers, referred to as "patches" (for the US Air Force Weapons School graduate patch worn on their left shoulder), are the "best of the best" and have completed extensive training making them the experts of their particular aircraft, weapons and tactics. Patches are highly respected in their field and constantly are working to establish new and improved tactics, techniques, training and procedures.

Working with the patch, the GLO will be closest to the point where most of the wing's training is planned and executed. Being collocated with the weapons officer also gives the GLO the greatest opportunity to learn the unit's and aircrafts' capabilities. Knowing the aircraft and the people assigned to fly the aircraft helps the GLO tailor pre-mission briefings to cover the most important information for the mission.

Working with Air Force Intelligence. In addition to working with wing weapons, the GLO will work closely with the wing and squadron intelligence sections. Air Force intelligence sections provide detailed targeting information and a wealth of information associated with enemy air defense and (or) counterair capabilities. The Air Force's intelligence sections' focus is providing the aircrews with the best situational awareness (SA) that they can.

SA can be explained as equipping the aircrews with useable information, from top to bottom, in a clear and concise manner. Building SA is no different than what we in the Army do when we communicate the mission and commander's intent to our subordinates. The better Soldiers and Airmen can understand and buy into the big picture, the better they will perform their assigned task.

Air Force intelligence sections do a superior job at providing the aircrews with that kind of SA from top to bottom. During their daily briefings, they cover everything from the strategic level to a "down-in-the-weeds" look at which countermeasure will defeat a particular threat. Air Force intelligence personnel are some of the finest and are committed to doing the best they can for their aircrews.

Interacting and living with the intelligence personnel, the GLO provides an often missing piece of their SA-driven intelligence by providing an understanding of the ground operations. Air Force personnel have been taught to look at and assess the battlefield in a different way than we, as ground forces, have. GLOs can help train the aircrews to understand and assess the ground combat situation for each and every mission. During peacetime, the GLO can teach and mentor the sections toward the things they should be concerned with when they are focused on CAS.

Capt Nick DiCapua, 355th Expeditionary Fighter Squadron, Bagram Air Base, Afghanistan, pilots his OA/A-10 Thunderbolt II during a close air support mission, 26 March 2006. (Photo by MSgt Lance Cheung, USAF)

Conducting the GLO Brief. Once deployed, the GLO is concerned mainly with knowing the battlespace from top to bottom. Knowing the terrain, the enemy, and friendly forces' locations and missions is what the GLO is all about. No one else in the wing or squadron has the knowledge or understanding of ground operations like the GLO does. Each day joint tactical air strike requests are processed through the TAGS, ending up as part of the aircrews' missions. Once received, the squadron mission planning cell (MPC) schedules aircraft, crews, air refueling tankers and basic mission products for the flight. The intelligence sections assemble the big picture information, graphics, threats, warnings and generic "who, what, when, where, and why" for each joint tactical air strike request.

While the Air Force focuses on assembling the flight information, the GLO researches what the ground commander needs the aircraft to do and what the aircrews can expect to see and or do to support each request. The GLO conducts research for every mission and joint tactical air strike request.

GLOs assemble information using whatever means are necessary, but the most effective link to the ground commander is the JTAC and (or) ALO at the brigade and battalion levels. If the GLO can contact the JTAC or ALO, he can ask the right questions and pass along the best and most up-to-date information to the aircrews. Additionally, the GLO can request maneuver graphics that, once interpreted for the aircrews, can add to the SA. The GLO also has the big picture provided to him by the battle field coordination detachment (BCD) located at the combined air operations center (CAOC), Corps ALOs, Air Support Operations Squadron and other liaisons from other services or agencies. That big picture and an understanding of the individual ground operations provide the aircrews with the best SA possible.

Judging Success. As in any liaison position, the GLO's efforts easily can go unnoticed. Judging how successful a GLO is can be determined best by those who have worked both with and without a GLO. The mission always can be accomplished, but having a GLO makes it easier and more efficient for all parties. Individual success comes in the form of an aircrew saying that your information "made their job easier because they understood what they needed to do" or when a JTAC lets you know that "the aircrews showed up ready to support, with a good understanding of the mission and all the products they needed." Those are the small tangible victories that make the job worthwhile and are noteworthy illustrations are why I believe that, within the next few years, we will see GLO positions filled at every wing.

Captain Todd T. Haley, Field Artillery (FA), is the Army Ground Liaison Officer (GLO) for the 388th Fighter Wing (FW) at Hill Air Force Base (AFB), Utah. He previously served as the GLO for the 332nd Air Expeditionary Wing (AEW), Balad Air Base, Iraq; 7th Bomb Wing (BW), Dyess AFB, Texas; 27th FW, Cannon AFB, New Mexico; 2nd BW, Barksdale AFB, Louisiana; and the 5th BW, Minot AFB, North Dakota. He was a Platoon Leader and Executive Officer (XO) for the Tennessee Army National Guard (ARNG) 181st FA (Multiple-Launch Rocket System or MLRS), and the Fire Support Officer (FSO), and a Fire Direction Officer (FDO), Platoon Leader and XO for the 1st Battalion, 9th FA (1-9 FA), 3rd Infantry Division, Fort Stewart, Georgia. Before receiving his commission, he served in the Mississippi ARNG 1-155 Armor Brigade and deployed to Operation Desert Storm (ODS) with the Alabama ARNG 1-20 Special Forces Group (Airborne).

2-15 FA Designs Course for Iraqi Soldiers

SFC John Lindsey, 2nd Battalion, 15th Field Artillery, shows Private Mohammed Kazem (right), 4th Brigade, 6th Iraqi Army Division, how to find an eight-digit grid coordinate. (Photo by SFC Angela McKinzie, 2nd Brigade Combat Team Public Affairs)

Iraqi soldiers from 4th Brigade, 6th Iraqi Army (IA) Division (4-6 IA), participated in an Iraqi advanced infantry course planned and developed by the 2nd Battalion, 15th Field Artillery (2-15 FA), 2nd Brigade Combat Team (BCT), 10th Mountain Division (Light Infantry) out of Fort Drum, New York.

The pilot 25-day course, dubbed the "Commando Course," offering advanced training including marksmanship, physical fitness, map reading, land navigation and troop-leading procedures, began 8 July at the IA Compound in Mahmudiyah, Iraq.

Before the pilot course could start, the 2-15 FA NCOs had to resource all materials, prepare the field and build a shoot house and an obstacle course.

The course was divided into three phases: advanced combat lifesaving; air-assault operations; and weapon instruction, troop-leading procedures and land navigation. The training, similar to the US Army Ranger Course, was so difficult that 56 out of 100 soldiers "washed out" on "day zero," according to Command Sergeant Major (CSM) Michael A. Grinston, 2-15 FA.

During the course, the IA soldiers learned how to be "mentally and physically tough" and gained "more experience than most IA soldiers have," according to Sergeant Mohammed Kazim, squad leader for 4-6 IA.

The IA soldiers participated in the course's live-fire exercises, developed sand tables to show how a mission is conducted, and wrote and carried out an entire operations order [OPORD]. Map-reading exercises were an added challenge because the IA soldiers had to learn American numerals. With an interpreter's help, they were able to find an eight-digit grid coordinate and use plotted grid coordinates.

Upon graduation, the students received a tab—similar to a US Army Ranger tab but with "Commando Course" written in Arabic and English.Two reiterations of the course were given before the 2-15 FA redeployed in October.

SFC Angela D. McKinzie
PAO, 2 BCT, 10th Mountain Div.
Fort Drum, NY

2nd Place, Category I Training for Combat/Stability Operations

A howitzer, fired by Soldiers from A/1-320 FA, 2 BCT, 101st Abn Div, sends a round down range during a two-week training mission at Fort Campbell, Kentucky, 25 April. (Photo by SPC Kelly K. McDowell, 2 BCT, 101st Abn Div Public Affairs)

2007 *Fires* Photo Contest Wi

1st Place, Category I
Training for Combat/Stability Operations

An airborne Artilleryman from B Battery, 2nd Battalion, 319th Field Artillery (B/2-319 FA) (Airborne), 2nd Brigade Combat Team (2 BCT), 82nd Airborne Division (Abn Div), parachutes while fellow Soldiers prepare to fire a 105-mm howitzer during a heavy-drop exercise at Sicily Drop Zone, Fort Bragg, North Carolina, on 4 October 2006. (Photo by SGT Mike Pryor, 2 BCT, 82nd Abn Div Public Affairs)

3rd Place (tie), Category I
Training for Combat/Stability Operations

A helicopter holds its position as Soldiers from 1-320th FA, 2 BCT, 101st Abn Div, reach out to hook up a howitzer for transportation during "hooker" qualification training 3 April. (Photo by SPC Kelly K. McDowell, 2 BCT, 101st Abn Div Public Affairs)

3rd Place (tie), Category I
Training for Combat/Stability Operations

SPC Carl Matagolai drives a heavy expanded-mobility tactical truck (HEMTT), carrying Patriot launcher canisters, through the mud as passenger SSG Courtney Torres holds on after a successful launch during the Operation Rolling Shield joint exercise between 3rd Battalion, 2nd Air Defense Artillery (3-2 ADA), and the German Air Force Air Defense Center at McGregor Range, New Mexico, 9 October. (Photo by SPC Brooks Fletcher, 31st ADA Brigade Public Affairs)

nners

2nd Place, Category II
Actual Combat/Stability Operations

PVT Todd Thomas of Hillsboro, Ohio, a radio-telephone operator with B/2-319 FA, 2 BCT, 82nd Abn Div, walks past a graffitti-covered wall during a patrol in the Graya'at area of Baghdad's Adhamiyah District 1 April. (Photo by SGT Mike Pryor, 2 BCT, 82nd Abn Div Public Affairs)

1st Place, Category II Actual Combat/Stability Operations

SSG Steven Michaelis, a squad leader with B/2-319 FA, 2 BCT, 82nd Abn Div, takes the point as his platoon moves down a street in Baghdad's Adhamiyah District known as an improvised-explosive device (IED) "hot spot" on 16 February. Paratroopers from 2-319 FA are using foot patrols to disrupt the insurgents' ability to emplace IEDs and armor-defeating devices along the roads. (Photo by SGT Mike Pryor, 2 BCT, 82nd Abn Div Public Affairs)

2008 *Fires* Photo Contest Rules

Purpose. The purpose of this annual contest is to obtain high-quality photos capturing Field Artillery (FA) and Air Defense Artillery (ADA) units and personnel conducting training or engaged in full-spectrum operations. These photos may appear as a cover or other shots for future editions of the magazine, as part of the Chief of the Fires Center of Excellence (CoE) poster series or in other esprit de corps or strategic communications projects.

Scope. Photos should capture images that tell the story of today's Army/Marine Field Artilleryman or Air Defenders in the War on Terrorism (WOT) or in training between June 2007 and June 2008. The competition is open to any military or civilian, amateur or professional photographer. Although entrants may submit horizontal or vertical photographs, vertical shots tend to work best for magazine covers and posters.

Two Prize Categories – Six Prizes. A First Place prize of $500, Second Place prize of $200 and Third Place Prize of $75 will be awarded in each of two categories: (1) Training for Combat/Stability Operations and (2) Actual Combat/Stability Operations. Each entrant can submit up to three photographs. The winning photos will be posted in the magazine's Photo Gallery on our website at sill-www.army.mil/firesbulletin/.

Rules. The rules for photo contest are as follows:

- Entries' contents must meet the requirements of the specified categories and be received by the magazine not later than 1 August 2008.
- Each photograph must be a color jpg or tif image.
- Each photo must have a minimum of four (4) mega pixels in its original file size. Any image with its resolution "beefed up" to meet contest requirements will be disqualified.
- Images cannot be manipulated other than the industry standard for darkroom processing, such as dodge, burn, crop, etc. (For clarification see DoD Directive 5040.5, "Alteration of DoD Imagery.")
- Images must have identifying and caption information embedded in the "File Info" or "Properties Summary." Include the photographer's name, unit/affiliation, email address, mailing address and phone number. Caption information must include who is doing what, where and when (date) in the photograph. Be sure to identify the personnel/unit being photographed—for example, SGT Joe B. Smith, C/2-20 Fires, 4th Fires Brigade, Fort Hood, Texas.
- Photos cannot be copyrighted or owned by an agency/publication; the image must be cleared for release and publishable in the magazine.

Judging. A panel of editors, professional photographers and military personnel will judge the submissions and select winners. The judges' decisions will be final.

Judging criteria is as follows:

- Power and impact of the message the image conveys.
- Composition, clarity, lighting, focus and exposure of the image.
- Creativity and originality.

Submissions. All submissions may be used at the discretion of the magazine staff. Up to three images per photographer can be submitted by email, compact disk (CD), zip disk or file transfer point (FTP). CDs and zip disks will not be returned.

- Email images to the *Fires* Bulletin at firesbulletin@conus.army.mil . Please submit only one image per email. Mark the subject line as "2008 Photo Contest/Photo #1 [2 or 3], Entry Category–Your Last Name."
- Mail CDs or zip disks to ATTN: Photo Contest at P.O. Box 33311; Fort Sill, OK 73503-0311.
- FedEx or UPS submission to *Fires,* Building 758, Room 7, McNair Road, Fort Sill, OK 73503-5600.
- For FTP submission, email firesbulletin@conus.army.mil and request an FTP site, user name and login.

Questions. If you have questions, please call the *Fires* staff at DSN 639-5121/6806 or commercial at (580) 442-5121/6806.

2007 *Fires* Red Book

ADA and FA Maps and Photo Contest Winners' Gallery

This pullout section of the 2007 *Fires* Red Book is designed to give the reader a reference guide for Army, Marine, National Guard and Marine Reserves Field Artillery and Army and National Guard Air Defense Artillery units around the globe.

Also included in this pullout are the winning photos of the 2007 *Fires* Photo Contest. This is the first year the Field Artillery and Air Defense Artillery photographers competed in the same competition, and the staff of the *Fires* bulletin would like to congratulate all who entered. All photographs were excellent examples of the photographers' skills and talents.

The top entries appearing in this magazine also are available for viewing and downloading under the "photo contest" gallery on our website at sill-www.army.mil/firesbulletin/. Photos entered in the contest may be used in upcoming editions of the magazine. Full credit will be given to the photographers.

Included in this pullout are the rules for the 2008 *Fires* Photo Contest.

Honorable Mention, Category I
Training for Combat/Stability Operations

Spent shells and belt links spew from an M-249 as a Soldier from 6th Battalion, 52nd Air Defense Artillery (6-52 ADA), 31st ADA Brigade, fires his rifle while qualifying at Kerr Hill Machine Gun Range, Fort Sill, Oklahoma, during the battalion's range density training on 5 February. (Photo by SPC Brooks Fletcher, 31st ADA Brigade Public Affairs)

Honorable Mention, Category I, Training for Combat/Stability Operations

First Lieutenant Christopher C. Ioset, C Battery, 2-1 ADA, 35th ADA Brigade, low crawls to the next task station, carrying the squad's much needed first aid equipment during the Stalker Challenge in Korea in March. (Photo by PFC Gretchen N. Goodrich, 35th ADA Brigade Public Affairs)

Active Army and Marine F

FORT LEWIS, WA
5-5 ADA (MAMD)
(11 ADA Bde)
2-12 Fires (155 T)
(4-2 ID SBCT)
1-37 Fires (155 T)
(3-2 ID SBCT)
17 Fires Bde (HHB)
5-3 Fires (HIMARS) (EAB)
1-377 Fires (155 T) (EAB)
F/26 (TAB)

29 PALMS, CA
3/11 (115 T) USMC

FORT IRWIN, CA
I Trp ADA
(1-11 ACR)

CAMP PENDLETON, CA
11 Marines (HQ)
1/11 (155 T) USMC
2/11 (155 T) USMC
5/11 (155 T/HIMARS) USMC

DAVIS-MONTHAN AFB, AZ
1 BCD

HOLLOMAN AFB, NM
1-62 ADA (P)
(11 ADA Bde)

FORT CARSON, CO
3-16 Fires (155 SP)
(2-4 ID HBCT)
3-29 Fires (155 SP)
(3-4 ID HBCT)

FORT BLISS, TX
2-29 Fires (155 SP)
(4-1 Cav HBCT)
32 AAMDC
11 ADA Bde
1-43 ADA (AMD)
2-43 ADA (AMD)
3-43 ADA (P)
5-52 ADA (AMD)
31 ADA Bde
2-1 ADA (P)
3-2 ADA (P)
USAADASCH
6 ADA Bde
2-6 ADA
3-6 ADA
1-56 ADA

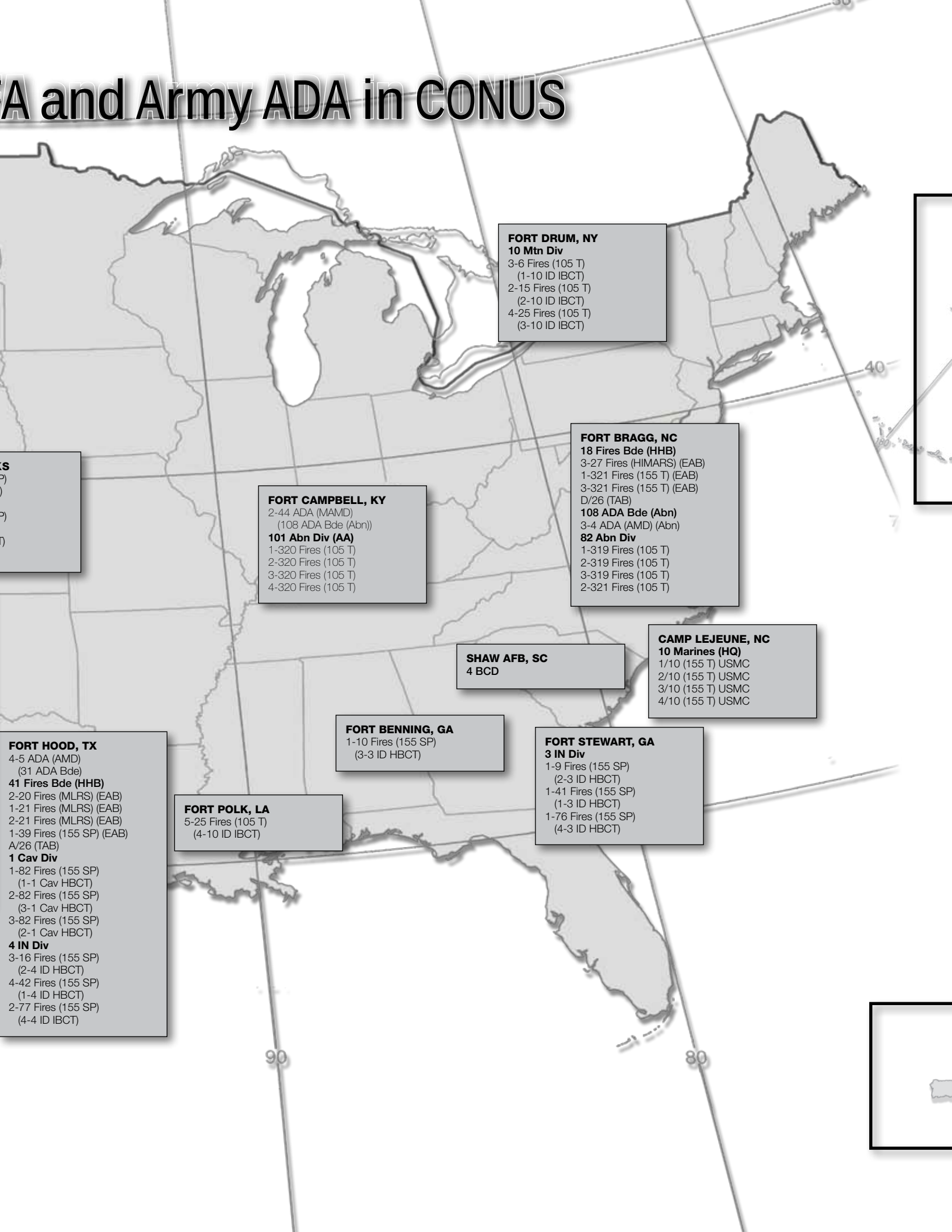
FORT SILL, OK
6-52 ADA (P)
(31 ADA Bde)
75 Fires Bde (HHB)
3-13 Fires (MLRS) (EAB)
1-17 Fires (155 SP) (EAB)
2-18 Fires (MLRS) (EAB)
C/26 (TAB)
214 Fires Bde (HHB)
2-4 Fires (MLRS) (EAB)
2-5 Fires (155 SP) (EAB)
1-14 Fires (MLRS) (EAB)
H/26 (TAB)
USAFATC (HHB)
1-19 FA
1-22 FA
1-40 FA
1-79 FA
95 AG (REC)
USAFAS
428 FA Bde
2-2 FA (105 T)
1-30 FA
1-78 FA

FORT RILEY, K
4-1 Fires (155 SP
(3-1 AD HBCT
1 IN Div
1-5 Fires (155 SP
(1-1 ID HBCT)
2-32 Fires (105 T
(4-1 ID IBCT)

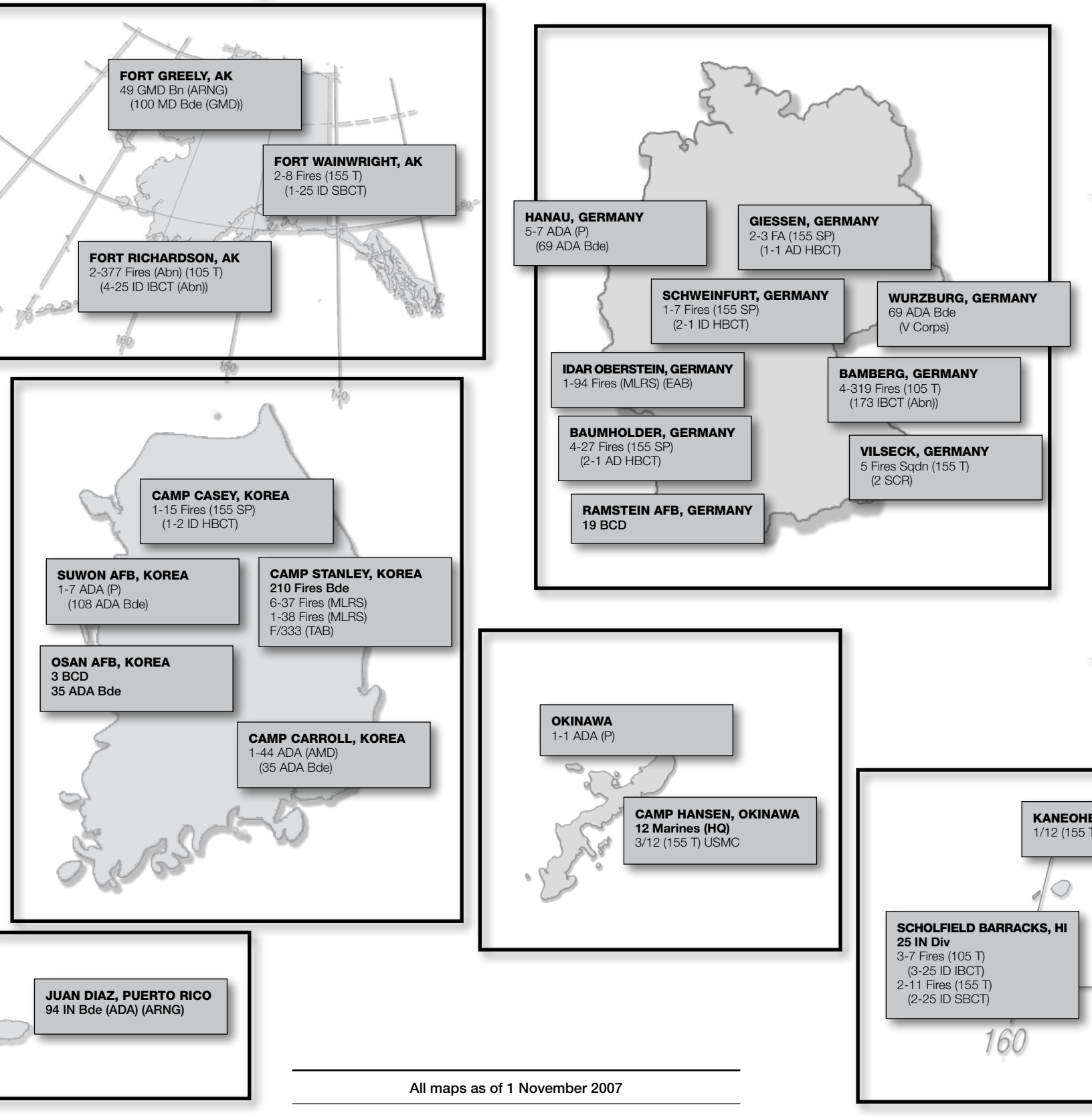
Legend:

105 T = 105-mm Towed Howitzer
155 T = 155-mm Towed Howitzer
155 SP = 155-mm Self-Propelled Howitzer
A = Avenger
AAMDC = Army Air and Missile Defense Command
Abn = Airborne
ACR = Armored Cavalry Regiment
AD = Armored Division
ADA = Air Defense Artillery
AMD = Air and Missile Defense
ARNG = Army National Guard
BCD = Battlefield Coordination Detachment
Bde = Brigade
Bn = Battalion
C/A = Corps Artillery
Cav = Cavalry
CONUS = Continental/Contiguous US
Div = Division
EAB = Echelons Above Brigade
FA = Field Artillery
GMD = Ground-Based Midcourse Defense
HBCT = Heavy Brigade Combat Team
HHB = Headquarters and Headquarters Battery
HIMARS = High-Mobility Artillery Rocket System
IBCT = Infantry Brigade Combat Team
ID = Infantry Division
MAMD = Maneuver Air and Missile Defense
MD = Missile Defense
MLRS = Multiple-Launch Rocket System
Mtn = Mountain
P = Patriot
S = Stinger
SAB = Separate Armored Brigade
SIB = Separate Infantry Brigade
SBCT = Stryker Brigade Combat Team
SCR = Stryker Cavalry Regiment
Sqdn = Squadron
TAB = Target Acquisition Battery
Trp = Troop
USAADASCH = US Army Air Defense Artillery School
USAFAS = US Army Field Artillery School
USAFATC = US Army Field Artillery Training Center
USMC = US Marine Corps
USMCR = US Marine Corps Reserves

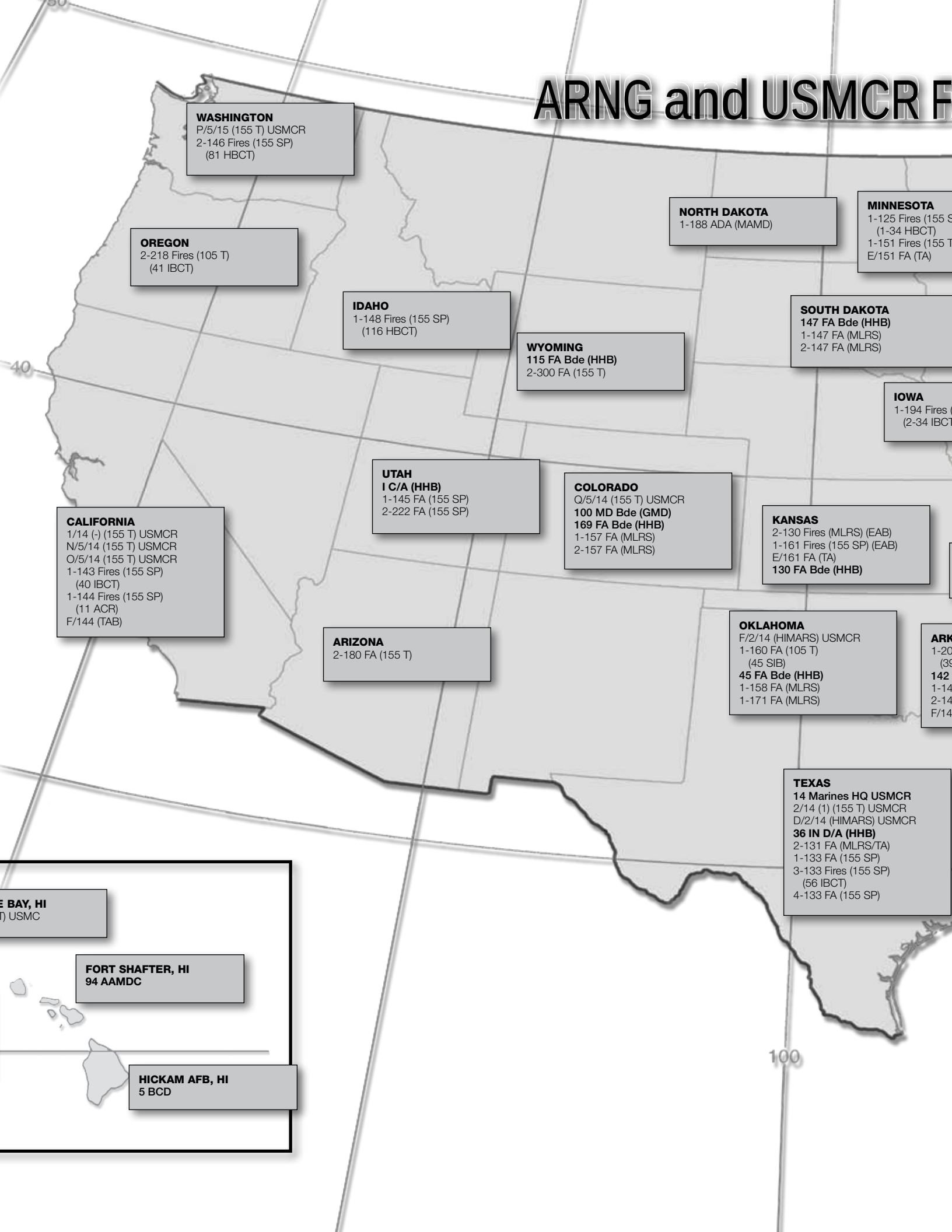
GA and Army ADA in CONUS



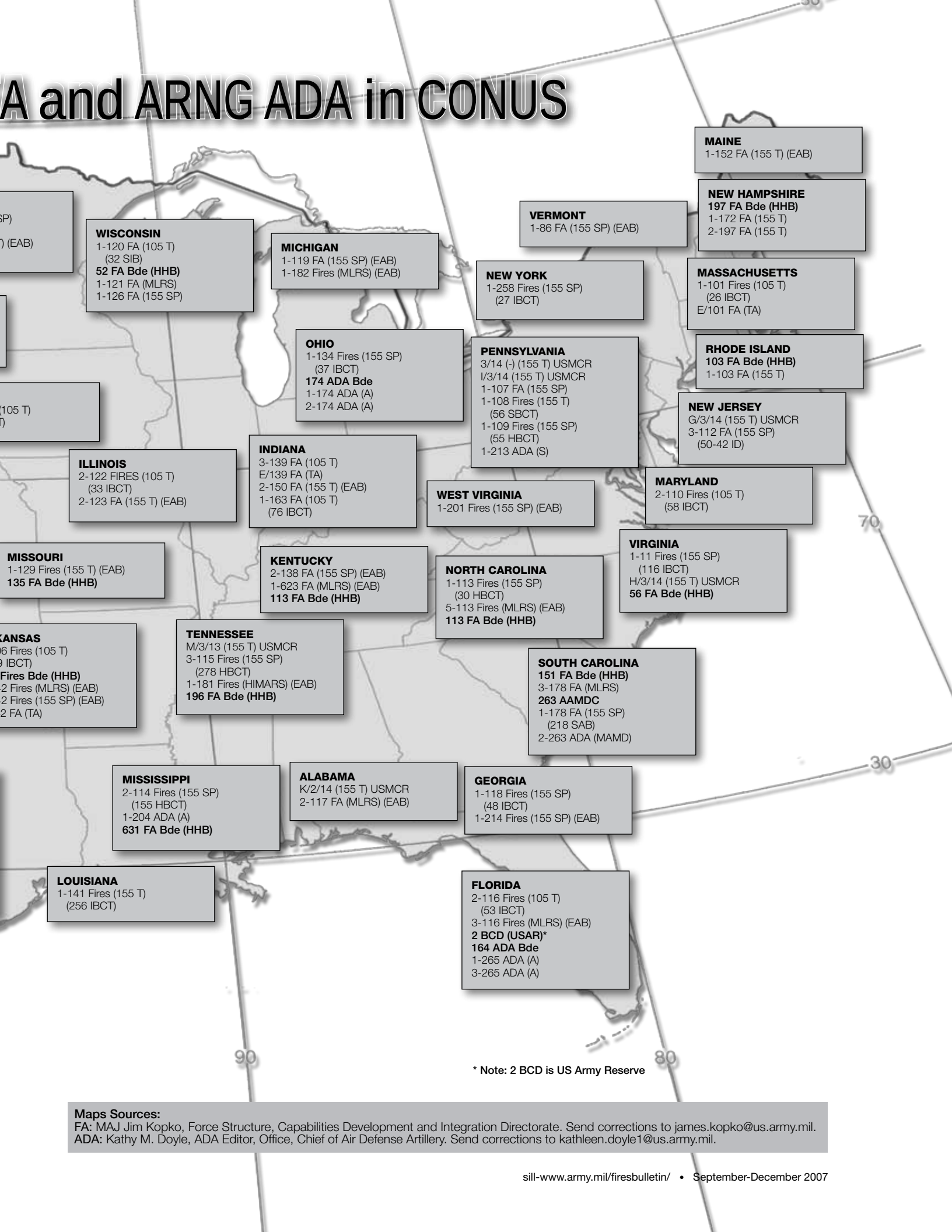
Active Army and Marine FA and Active Army and ARNG ADA in OCONUS



All maps as of 1 November 2007


ARNG and USMCR F
WASHINGTON
P/5/15 (155 T) USMCR
2-146 Fires (155 SP)
(81 HBCT)
OREGON
2-218 Fires (105 T)
(41 IBCT)
IDAHO
1-148 Fires (155 SP)
(116 HBCT)
NORTH DAKOTA
1-188 ADA (MAMD)
MINNESOTA
1-125 Fires (155 S
(1-34 HBCT)
1-151 Fires (155 T
E/151 FA (TA)
SOUTH DAKOTA
147 FA Bde (HHB)
1-147 FA (MLRS)
2-147 FA (MLRS)
WYOMING
115 FA Bde (HHB)
2-300 FA (155 T)
IOWA
1-194 Fires
(2-34 IBCT
40
UTAH
I C/A (HHB)
1-145 FA (155 SP)
2-222 FA (155 SP)
COLORADO
Q/5/14 (155 T) USMCR
100 MD Bde (GMD)
169 FA Bde (HHB)
1-157 FA (MLRS)
2-157 FA (MLRS)
KANSAS
2-130 Fires (MLRS) (EAB)
1-161 Fires (155 SP) (EAB)
E/161 FA (TA)
130 FA Bde (HHB)
CALIFORNIA
1/14 (-) (155 T) USMCR
N/5/14 (155 T) USMCR
O/5/14 (155 T) USMCR
1-143 Fires (155 SP)
(40 IBCT)
1-144 Fires (155 SP)
(11 ACR)
F/144 (TAB)
ARIZONA
2-180 FA (155 T)
OKLAHOMA
F/2/14 (HIMARS) USMCR
1-160 FA (105 T)
(45 SIB)
45 FA Bde (HHB)
1-158 FA (MLRS)
1-171 FA (MLRS)
ARK
1-20
(39
142
1-14
2-14
F/14
TEXAS
14 Marines HQ USMCR
2/14 (1) (155 T) USMCR
D/2/14 (HIMARS) USMCR
36 IN D/A (HHB)
2-131 FA (MLRS/TA)
1-133 FA (155 SP)
3-133 Fires (155 SP)
(56 IBCT)
4-133 FA (155 SP)
E BAY, HI
T) USMC
FORT SHAFTER, HI
94 AAMDC
HICKAM AFB, HI
5 BCD
100

A and ARNG ADA in CONUS



* Note: 2 BCD is US Army Reserve

Maps Sources:
FA: MAJ Jim Kopko, Force Structure, Capabilities Development and Integration Directorate. Send corrections to james.kopko@us.army.mil.
ADA: Kathy M. Doyle, ADA Editor, Office, Chief of Air Defense Artillery. Send corrections to kathleen.doyle1@us.army.mil.

Brigade Targeting, the MDMP and Time

By Majors L. Cristine Gibney, ADA, and James P. Smith, IN; Captain Evans A. Hanson, FA; and Chief Warrant Officer Three James T. Jeter, FA

The 1st Battalion, 5th Cavalry (1-5 Cav), Black Knights *advanced rapidly upon the al Mahdi Militia stronghold and training camp in the Milawa Valley in the northwest of Iraq's Irwin District. Friendly mortars and artillery pounded the enemy while a US Air Force AC-130 gunship destroyed the al Mahdi Militia's fighting positions. The dusty haze of dawn and urban combat reminded some veterans of the 1-5 Cav's assault in Najaf during Operation Iraqi Freedom (OIF) II.*

Within hours, Black Knight *Soldiers seized the al Mahdi Militia's stronghold and rescued the US Soldiers held hostage in the nearby village, honing their high-intensity offensive skills. Simultaneously, the 3-82 Field Artillery (FA),* Red Dragons*, performing as a motorized infantry battalion in the southern Irwin District, maintained security on more than 20 linear kilometers of a vitally important main supply route (MSR). In addition, the* Red Dragons *honed their civil-military operations (CMO) skills in the town of Abar Layla, negotiating with the Iraqi police (IP) chief and civic leaders to broker a deal to ease the sectarian tension that was growing in the divided city.*

Soldiers of the 2nd *Black Jack* Brigade Combat Team (BCT), 1st Cavalry Division, including the 1-5 Cav, conducted these full-spectrum operations against the world-class contemporary operating environment (COE) opposing forces (OPFOR) at the recent National Training Center (NTC), Fort Irwin, California, rotation 06-07, that was also a mission rehearsal exercise (MRE) for OIF.

As *Black Jack* planned operations at NTC, the brigade experienced turbulence common in today's wartime Army—a new staff, new organization, new equipment and a short training window. With these challenges, the staff found the NTC experience a positive learning environment.

As we prepared for the NTC, we experimented with different staff organizations and internal staff processes. Writing this article helped us immensely during our own after-action review (AAR) process, and hopefully, the article will help other units maximize the training opportunities and "get to the next level" as they manage one of their most precious resources—time.

Black Jack's unique approach to targeting translated the commander's intent into a focused and feasible campaign plan. This process enabled 2 BCT to exercise all warfighting functions and tactical enablers, refine its targeting process and maximize the limited nine-day training opportunity.

The lessons the staff learned continued to come back to the roles the staff must play to enhance the commander's ability to command. To serve the commander and subordinate units, the staff must enhance the commander's ability to apply the art and science of war: the basic methodology outlined in *Field Manual (FM) 6-0, Mission Command: Command and Control of Army Forces*—Visualize, Describe, Direct and Lead.

Visualize. During the visualization process, the staff had to learn to see the battlefield through the eyes of the *Black Jack* brigade commander. In turn, the staff could facilitate the commander's understanding of the battlefield. This process began with the initial mission analysis brief and became more focused as the vision became clearer throughout the rotation. There was a constant dialogue among the commander, executive officer (XO) and staff, which helped develop the commander's visualization of not only friendly forces, enemy forces and terrain, but also the "people" of Medina Irwin.

The brigade commander understood the complexities of the operational environment where information, political, social, economic and infrastructure factors overlap in concentric circles with the military mission. Each is highly dependent on *people*. Consequently, he developed an overarching statement of intent for the "see yourself as the people see you" aspect of visualization and

Soldiers from B Company, 1st Battalion, 5th Cavalry (B/1-5 Cav), stack near a building as they prepare to conduct a search at the National Training Center (NTC) in June 2006. (Photo by SFC Kap Kim, 2nd Brigade Combat Team [2 BCT] Public Affairs)

implored all *Black Jack* Soldiers to be "culturally aware." Through this lens, Soldiers could be positive, polite, professional, prepared to help and prepared to kill—known as the "5 Ps" by the 2 BCT Soldiers. This vision became the personality of the brigade.

Describe and Direct. The BCT commander translated his vision into a clear, concise two-page document—his commander's intent. The commander's intent grew into a campaign plan. His intent encompassed four key tasks: (1) maintain a stable and secure environment for the Iraqi people, (2) improve the lives of the Iraqi people, (3) give back to the Iraqi people, and (4) keep the people informed.

The desired end state was to create a stable and secure environment in conjunction with the Iraqis, an environment in which the anti-Iraqi forces (AIF) are defeated and the Iraqi security forces (ISF) are trained and capable of maintaining a safe and secure environment for effective Iraqi self-governance and growth as a nation. *Black Jack* leaders employed decisive information operations (IO) to achieve the end state.

The commander's intent looked more like a roadmap to victory than a simple statement of intent. Also, each key task had subtasks that paralleled the now ubiquitous lines of operations (LOOs) developed by 1st Cav during OIF II: conduct full-spectrum IO, conduct combat operations, train and employ ISF, restore essential services, promote governance and promote economic pluralism.

The 2 BCT staff is peppered with OIF II veterans who served in Baghdad and have first-hand knowledge of the OIF LOOs used in today's NTC and Battle Command Training Program (BCTP) scenarios. Logical LOOs have become an almost intuitive way to communicate amongst this group of officers. It was a natural evolution that the staff attempt to depict the commander's intent graphically.

Under the BCT XO's direction, the BCT fire support officer (FSO) and IO coordinator (IOCOORD) worked together to merge the division's LOOs and the five key tasks to form the "roads" of this new roadmap (Figure 1). For each LOO, the FSO placed squares representing specific objectives to create effects conducive to reaching the commander's intended end state. The FSO and IOCOORD used system-of-system analysis and merged portions of the joint targeting process with the familiar decide, detect, deliver and assess (D^3A) process.

Joint Publication 3-60 Joint Targeting describes Phase 1 of the joint targeting process as "understanding the military end state and the commander's intent, objectives, desired effects and required tasks developed during planning provides the initial impetus for the targeting process." Starting with the first step of the joint targeting process, the staff focused the D^3A process in the condensed timeline.

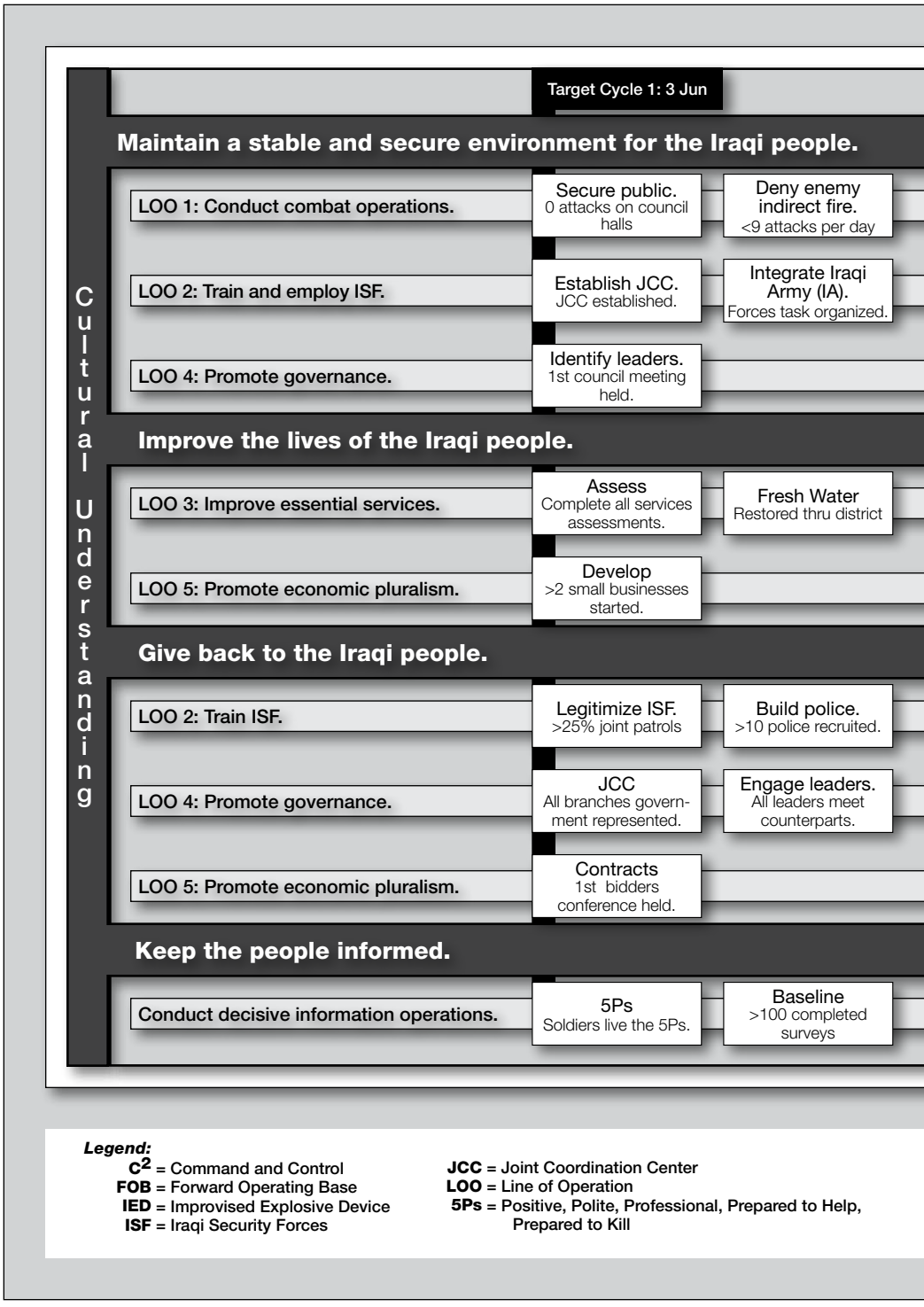
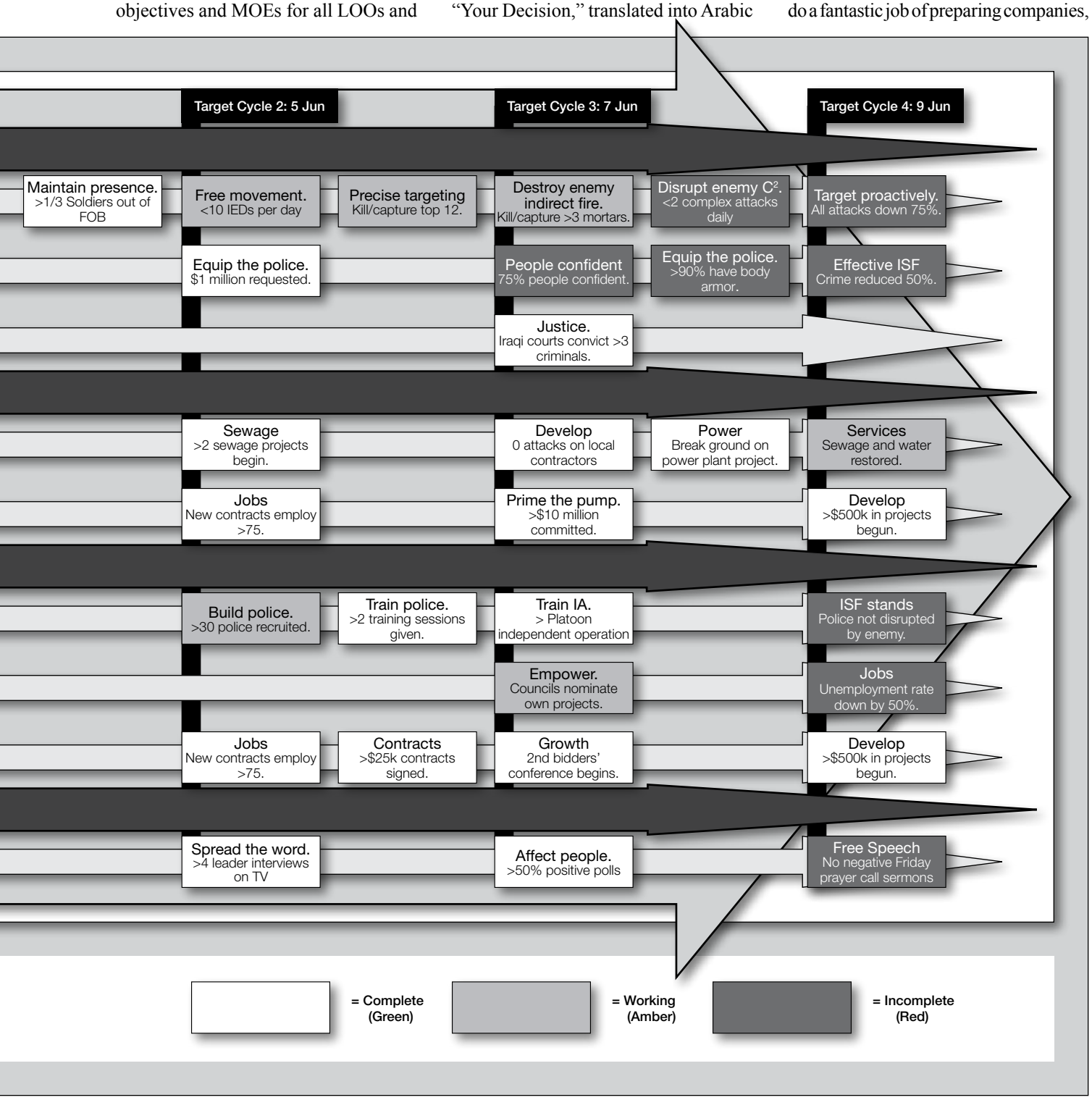


Figure 1: Brigade Campaign Plan. This plan merged the division and brigade combat team (BCT) commanders' intents and laid out specific objectives along each line of operation (LOO). Each objective has an associated measure of effectiveness (MOE). Every 48 hours, during the targeting meeting, the commander evaluated the progress of the plan. This plan kept the BCT on track and helped identify efforts that required more resources.

This process allowed the staff to identify objectives by choosing critical capabilities and vulnerabilities among the enemy in the operational environment of Medina Irwin. The IOCOORD specified measures of effectiveness (MOEs) for each objective. He created these MOEs from the baseline trends and patterns given to us from historical data from the NTC-simulated BCT we would replace. The FSO combined all objectives and MOEs for all LOOs and key tasks, then aligned all objectives along phased points in time to create the BCT campaign plan.

One of the most significant parts of the plan was the overarching IO theme. We determined all targeting tasks must focus on empowering the citizens of Medina Irwin. They must decide to rule themselves and set the standards for their lives. Our overarching IO theme as well as the name of our BCT operation was "Your Decision," translated into Arabic as *Qaraikum*. Critical to this task was the involvement of the local civil and religious leaders. The 2 BCT's end state and exit strategy required that the town leadership make the decisions, secure themselves and apply city resources to create jobs.

OIF requires MultiNational Forces (MNF) to operate persistently to defeat a combination of various and dedicated enemy forces. The COE OPFOR at NTC do a fantastic job of preparing companies,



platoons and Soldiers to fight and win the War on Terrorism (WOT).

In this kind of fight, victories rarely are seen in a matter of days. However, the BCT NTC campaign plan gave *Black Jack* an achievable goal, even considering the short nine-day span of the exercise. In the brigade commander's words, this exercise is "a race to the people: not a marathon, but a sprint! In order to make the most of the NTC experience, the BCT must hit the ground running. There's no time for a long period of acclimatization and adjustment, no time to wait and see what the enemy will do to us."

To derive relevant lessons from a nine-day war, the staff discounted certain aspects of the elements of the operational design. We all knew that our military end state was nine days away. The commander made a cognitive decision to allow us to increase the tempo of operations and minimize the considerations of subordinate units' culmination points to derive long-term lessons from a short-term fight.

Direct, Part II. *Black Jack* "hit the ground running." Immediately upon receipt of the mission, the IOCOORD and brigade S2 performed their initial intelligence preparation of the battlefield (IPB). The IOCOORD constructed an overlay of all the town's infrastructure and civil-situation components using the sewer, water, electricity, academics, trash, medical and security (SWEAT-MS) methodology. He identified influential leaders and cultural centers of gravity. During mission analysis, we overlaid the civil situation on the enemy situational template to develop a full-spectrum situational template (Figure 2). Due to the NTC orders process, this step happened while the staff was well into the "direct" portion of the science of war. While visualize, describe, direct and lead seems linear in doctrinal diagrams, it is actually a dynamic flowing model.

The targeting process began during course-of-action (COA) development as the brigade targeting officer and FSO performed target value analysis to develop high-value targets (HVTs) for the brigade commander's approval. Upon receipt of the commander's targeting guidance, we developed the specific high-payoff target list (HPTL). Our initial HPTL included specific lethal and nonlethal target categories. The targeting officer, FSO and S3 referred to the campaign plan and HPTL to develop the BCT's concept of operations and COA sketch.

Using this technique, we ensured each

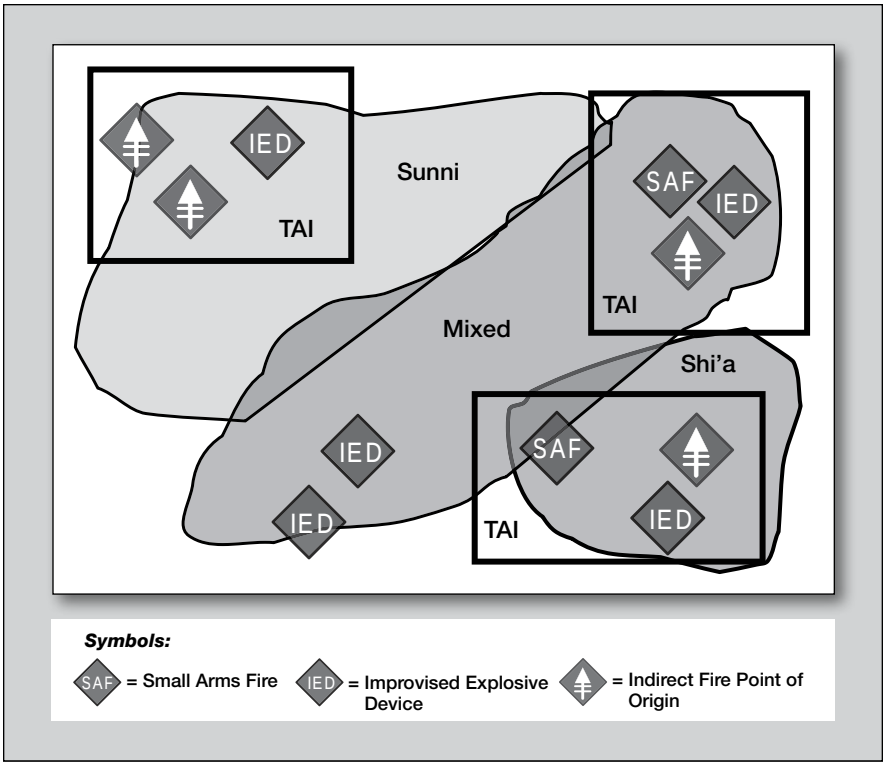


Figure 2. Full-Spectrum Intelligence Preparation of the Battlefield (IPB). The BCT targeting officer helps merge input from the BCT information operations coordinator (IOCOORD) and S2 to develop a consolidated situational template. This template reflects a historical pattern analysis of enemy activities (the symbols) and identifies target areas of interest (TAIs).

battalion's task and purpose addressed the enemy threat and was responsive to the people's needs. For example, 2 BCT did not create generic tasks to subordinate units such as, "1-8 Cav will conduct stability operations in Area of Operations (AO) Mustang to promote a stable and secure environment." Instead, we published specific purpose-laden tasks such as, "1-8 Cav, the BCT decisive operation, will secure the capitol city, Medina Jabal, to create a safe and secure environment to increase the spread of legitimate and effective self-government."

Further, each battalion supporting the BCT decisive operation could clearly *visualize* its role in the BCT's overall scheme to *describe* and *direct* its own COA. For example, "4-9 Cav will screen along the Iranian border in AO Darkhorse and neutralize the al Mahdi Militia in Mezra Mazik Ammar to prevent infiltration and smuggling through the border and prevent destabilizing sectarian influence from spreading to Medina Jabal in AO Mustang." All battalion mission statements referred back to their impact on the BCT's decisive operation.

The next step involved expanding each unit's task and purpose to specify subtasks to support the decisive operation. For example, one of 4-9 Cav's seven specified tasks was, "Disrupt the enemy's ability to place effective fires and surveillance on 2 BCT forces to enable 2 BCT to conduct stability operations from Forward Operating Base (FOB) Miami." The FSO and planner worked together to develop the COA. There was no need to develop a separate fire support plan, because the essential fire support tasks were nested in the tasks to subordinate units.

Next, the S3 planner, targeting officer and FSO allocated specific methods for each task to subordinate units. In this case, 4-9 Cav's tasks were to "conduct lethal and nonlethal area denial operations in targeted area of interest (TAI) 51201 with an emphasis on historical attack hours of 2000-2200 and conduct countermortar and counterrocket operations in TAI 51202 with an emphasis on the historical attack hours of 2000-2400." Each task specified in the COA had a clear purpose and was nested in each unit's decisive operation. Further, each unit knew exactly what to do to perform the task with a clear purpose. Most importantly, each unit clearly understood how each task nested within the BCT's overall concept as well as that task's place in the campaign plan.

Finally, during the orders-production

process, the BCT staff began to build the initial target synchronization matrix (TSM). The TSM (Figure 3) detailed how the BCT allocated assets to execute the plan. For example, regarding 4-9 Cav's task in TAI 51201, the TSM allocated several targets. One such target was AU1006, the local IP station chief, against whom the BCT had allocated a commander's emergency response program (CERP) security improvement project and a key leader engagement with media coverage. This target, like all targets, listed a specific MOE of "IP apprehend at least two enemy mortar teams and at least one AIF financier, reducing daily attacks from TAI 51201 by 75 percent."

Thus, the initial plan issued in the operations order (OPORD) included clear end states and a road map in the form of the commander's intent and a campaign plan. Battalions knew their specific tasks and purposes from the start and hit the ground running from day one.

NTC observer/controllers (O/Cs) later claimed they never had seen a BCT with so many units at all levels *immediately* focusing their patrols and synchronizing intelligence, surveillance, and reconnaissance (ISR) assets on specific times and locations of enemy activities, while simultaneously delivering CERP projects, conducting leader negotiations and creating an immediate positive impact on the operational environment. The challenge for *Black Jack* was to maintain this initiative and stay ahead of the enemy's decision cycle for the remaining eight days.

Describe—Prepare/Execute. It was important to maintain the momentum with the targeting process. Before deploying, the *Black Jack* XO said, "The targeting process will drive operations—it is our daily MDMP [military decision-making process]. It will keep us bringing the fight to the enemy, day in, day out."

The TSM that supports the targeting process is a living document, updated at each targeting working group. The targeting working group, run by the FSO and chaired by the XO, included attendees representing all warfighting functions in both the lethal and nonlethal efforts.

The TSM combined both lethal and nonlethal targets, avoiding any "stove piping" of these critical efforts. *FM 3-09.42 Tactics, Techniques and Procedures for Fire Support for the Brigade Combat Team* states that "the targeting working group is critical to facilitating the targeting process and integrating targeting with BCT operations…[it] requires focus, participation from all functional area representatives, [and should] synchronize lethal and nonlethal unit actions."

Many units in Iraq currently hold a targeting working group weekly. Due to the compressed timeline for training at the NTC, we executed a targeting working group daily. Every other day, we held the targeting meeting and ap-

Target or TAI #	SOI	LOO and Key Task	Target Description and Location	Asset Allocated	Value	Priority Observer	Remarks/Past Actions	Task to Elements	Contractor (Projects) or POC Info	MOE
Assess: IO Exploitation Phase										
AU1013	Medina Wasl	LOO 3: Services Disrupt Enemy in Medina Wasl	Medina Wasl Porta Potties NV 671 249	C Company Commander	US Supplies	1-5	Delivery delayed because of logistics issues.	Delivered 5 Jun	Mayor Latif	No sewage backup in the street.
				Bde S4	10 Porta Potties			Delivered 5 Jun		
Deliver: Active Engagement Target List										
T5127	Abar Layla	LOO 1; Combat Counter-IED	Langford Lake NV 385 741	Patrols, AH-64D, EA6B, OPs	N/A	3-82	Historical IED Location	8 Jun: _Patrols 0400-0600 _AH-64D 0400-0600; 1800-2000 _EA6B 0600-0800; 2000-2200 _3-82 OP 1800-2000	N/A	IED financier destroyed.
AU 1006	Mezra Mazik Ammar	LOO 1: Combat Counter-IED And Mortar/ Rocket Points Of Origin; LOO 2: Empower Iraqi Security Forces	Iraqi Police (IP) Chief LTC Ammar Hadi NV 712 320	Key Leader	N/A	4-9	Suspect police passively allowing mortar/rocket activity.	NLT 8 Jun: Conduct Leader Engagement/Negotiation With Arab Media To Obtain Overt Police Support Of Countermortar Efforts	N/A	IP apprehend at least two enemy mortar teams and at least one financier reducing daily attacks from TAI 51201 by 75%.
				CERP	13,000 Iraqi Dinars		IP Station Security Wall And Cameras	NLT 9 Jun: 4-9 Cav Submit Final CERP Packet for BCT Approval	Essam Al Timimi	
				Arab TV Media	N/A		al Hurra Iraq TV Reporter Ziyad Shihab	Arab TV Media Televises Leader Negotiation To Increase Pressure On Police Chief To Cooperate	N/A	
Detect: Targets Awaiting More Intelligence/Approval/Funding										
AC 4002	al Jaff	LOO 1; Precision Targeting	Jibril Ihsan Hamal al Samarai Location Unknown	Cordon And Search	N/A	1-5	Possibly Dangerous Muhammed's Army	Use S2/THT to connect with source at FOB: attempt to fill info gaps	See Annex B	Enemy detained.
Decide: Nominated Targets										
AU5004	Abar Layla	LOO 3, 5: Services, Economic Sectarian Tension	Propane Station Security Improvement Project NU 892 431	CERP	20,000 Iraqi Dinars	3-82	Propane Center Site Unsecure; Target For Sabotage	Unit Submit CERP Packet	Mohammed Adad al-Muta'si	Fixed site secured.

Legend:
Bde = Brigade
CERP = Commander's Emergency Response Program
OPs = Operations
POC = Point of Contact
SOI = Sphere of Influence
THT = Tactical Human Intelligence Team

Figure 3. Simple Targets on the Target Synchronization Matrix (TSM), 071400JUN06. The targets are in various phases of the targeting process (Decide, Detect, Deliver and Assess or D^{3}A) and categorized by the LOOs and key tasks they support. (The names are fictional.)

Soldiers from A/3-82 Field Artillery conduct an assault in the town of Abar Layla at the NTC in June 2006. (Photo by SFC Kap Kim, 2 BCT Public Affairs)

proval brief for the BCT commander. This equated to four targeting cycles during our rotation.

The TSM and the targeting working group drove the daily MDMP and fragmentary order (FRAGO) production. The targeting working group brought battalion FSOs and S2s together with representatives from all BCT functional areas using the command post of the future (CPOF). All participants discussed the current and anticipated enemy and civil situations, refined TAIs and the assets applied against them, shared improvised explosive device (IED) storyboards, reviewed and refined the ISR matrix, and discussed key nonlethal events and CERP projects. The targeting working group enabled us to synchronize the BCT's lethal and nonlethal fires using the D^3A methodology.

We also used MOEs on the TSM to assess the success of individual engagements. It is important to mention that the MOEs should be quantifiable and address the true purpose of each target. For example, if the purpose of a school supply delivery or community health outreach program is to influence the people and set the conditions for the local populace to give up information about enemy activity, then the MOE should specify how many contact reports will be generated. If the purpose of the leader engagement is to persuade the local IP chief to diversify his police force to represent the local populace's ethnic and religious mix, then the MOE should specify how many Sunnis or Shiites will need to be hired.

The targeting working group attendees assessed individual BCT-level targets for reengagement, as needed, based on these MOEs. Similarly, we referred to the campaign plan's broader scope objectives and associated MOEs and assessed our progress along each key task and LOO. We used the assessment of our progress along the campaign plan each cycle to refine or develop new tasks, methods, purposes and effects and maintain "an azimuth" to ensure we were achieving the commander's intended end state. By color-coding each objective "square" on the campaign plan as red, amber or green (Figure 1), we could identify the enemy's overall COA. Were the AIF in AO *Black Jack* fighting us along the ISF and governance LOOs? Further, the color-coded campaign plan served as the BCT decision support matrix (DSM), helping the commander make decisions on shifting forces, actions and resources to attack the AIF better in AO *Black Jack* and stay ahead of the enemy's decision cycle.

Assessing Results. Upon end of mission (EOM) on day nine, we looked at how *Black Jack* progressed in the "race to the people" along each LOO of its campaign plan. The color codes of red, amber or green on each objective block showed our progress on day nine. As most of our key tasks were long-term and difficult to quantify, MOEs in the campaign plan helped identify if we were on- or off-azimuth.

Some metrics can be charted by MOE, but it is important to look at qualitative results also. An example of qualitative results is the impact we made on IED makers. The O/Cs gave us a quote from one of the IED makers in the Irwin District. He said, "The ISF keep denying my hiding places, US Soldiers keep killing my IED emplacers, and the townspeople are less willing to let me stay in their town. It's only a matter of time before they get me." A second example of qualitative results was the fact that local government officials began taking unprecedented stances against the terrorists on the local news.

Quantitative results included the kill or capture of nine of 12 known high-value individuals (HVIs) with the prosecution of three of them in the Iraqi criminal courts. The IOCOORD secured funding for nearly $1 million in equipment for the ISF. Upon EOM, 2 BCT had initiated more than 35 projects (many of which were nominated by local leaders), employed more than 80 Iraqis and participated with an autonomous company-sized ISF element during a successful high-intensity operation.

Applying Lessons Learned. The BCT XO coached the staff to "be an extension of the commander's brain." The NTC scenario, O/Cs and OPFOR helped us practice this. There are great opportunities during a nine-day war that a staff can use to develop processes further. The 2 BCT AAR did not sound like a history lesson, but looked forward to our pending deployment. Our future focuses on: ISR (visualize/describe), IED Defeat (visualize/describe), cultural awareness (visualize), digital operations (visualize/direct) and battle command (visualize/describe/direct).

Our campaign plan and full-spectrum targeting methodology not only contributed to our success, but also highlighted some weaknesses that may not have been evident normally.

Integrate Enablers and Itty Bitty Units. Units were forced to rely on civil-affairs teams (CATs) and tactical psychological operations (PSYOP) teams (TPTs) to meet mission requirements in the fast-paced NTC environment. As the kinetic operations increased, we maintained our emphasis on non-kinetic targets simultaneously. Often, it takes weeks to get to know our newly attached special operations friends from CA and PSYOP, integrate them into the battle rhythm and synchronize them with the commander's intent. This process also can prove emotional for some units. By making nonlethal targeting such a big part of the daily BCT operations, we accelerated the growing pains of these units' integration, helping us make significant progress in a short time.

Follow Through. We eventually nailed the Detect portion of targeting by developing and synchronizing a good ISR plan tasking specific units or collection assets. However, we faltered a bit when it was time to Deliver. We eventually learned that we must have not only a good ISR plan, but it must be linked to specific information requirements (IRs) and developed into a DSM to make our efforts truly pay off.

Stay at Your Level—Company Com-

manders "Get it!" During the first two targeting cycles, we ordered battalion FSOs to provide visibility to the BCT on every battalion-level target, project or event. This quickly became cumbersome. We did not define specific target selection standards (TSS) clearly for the BCT, updated for the COE.

By publishing clear TSS and focusing on the HPTL during collaborative targeting working groups, we would have had a more efficient BCT targeting process that allowed battalions to act freely within the commander's intent and develop their own targeting processes.

By employing fire supporters as targeteers at every level, staffs would have the input they need to manage information for their commanders. As time goes on, the process becomes "bottom up" driven and oriented toward allocating resources to support the boots-on-the-ground counterinsurgent fighters who really *get it.*

Get Ahead of the Enemy and Your Subordinate Units. Unfortunately, we never really perfected the BCT's targeting battle rhythm to allow battalions to conduct deliberate targeting at their level. We were on a 48-hour targeting cycle to deal with the time-compressed NTC simulation. Our targeting working group on day *one* followed by the targeting meeting on day *two* covered the events of days *three* and *four*. Midday on day two, we published the BCT's FRAGO. However, the battalions often were conducting rehearsals for day three by the time the targeting tasks were published. As difficult as it may seem, at the NTC, the BCT staff must make assumptions, as necessary, to conduct targeting at least 36 hours out to provide the same opportunity for battalion staffs to reap the benefits of a full-blown targeting process at the battalion level.

Integrate and Track the Targeting Process. The greatest benefit of 2 BCT's approach to targeting was that we were able to exercise all our enablers, such as CA, public affairs (PA), the brigade operational law team (BOLT), PSYOP, etc. In addition, we eked out more lessons from our targeting process than if we had looked at our rotation as a simple nine-day fight for survival rather than a full campaign.

Notably, our targeting working groups initially were long and painful. However, they produced a holistic product with input from all players. Importantly, we were able to refine our ISR plan considerably in nine days. Finally, the inclusive targeting process and our attitude to commit ourselves to learning and getting better every day broke down "stovepipes" and barriers to self-improvement. We created a team-building spirit that made the *Black Jack* staff a rewarding place to work.

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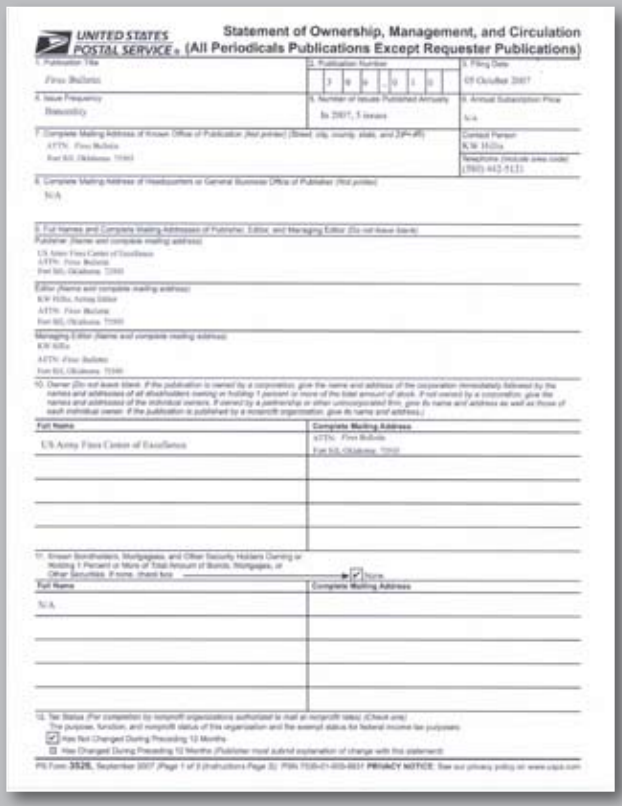
Chief Warrant Officer Three James T. Jeter, FA, is the Assistant Targeting Officer (Lethal) for MND-B. He previously served as the Targeting Officer for 2 BCT, in support of OIF II and 06-08, where he synchronized lethal and nonlethal targeting including high-value individual (HVI) targeting, counterfire and nonlethal/IO targeting.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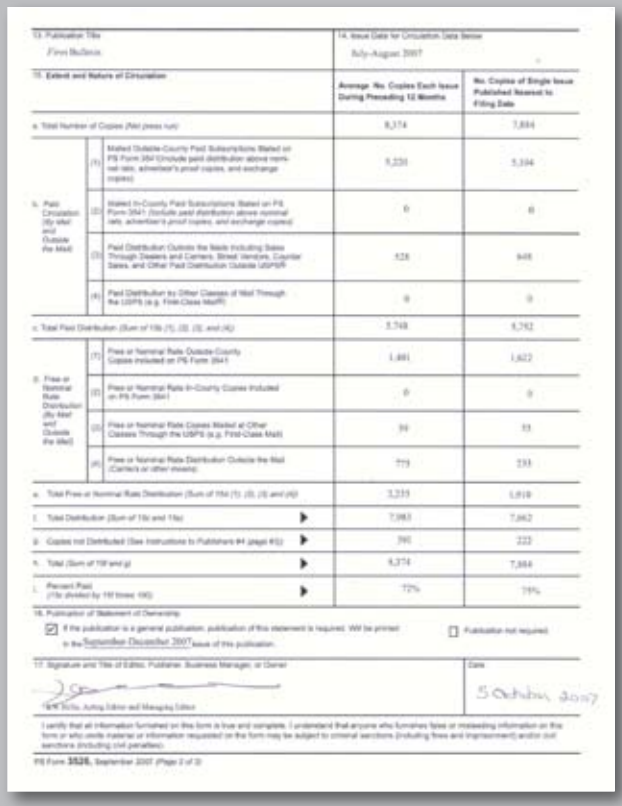

COLTs: Recon and Surveillance Assets for Today's BCTs

By Sergeant First Class James A. Brandt, FA

SGT Jason Traywick, 113th FA, operates a ground/vehicular laser locator designator (G/VLLD) with the AN/TAS 4 nightsight during an exercise near Camp Caldwell, Iraq, 14 October 2004. (Photo by SrA Christopher A. Marasky, 30th Space Communications Squadron)

Throughout Army history, the brigades' combat observation lasing teams (COLTs) have been known as the highest trained observers at the brigade commander's disposal. But with the change from traditional high-intensity combat operations to stability operations, COLTs have become a forgotten asset. Instead of occupying observation posts (OPs), they are serving as personal security detachments (PSDs), forward operating base (FOB) and contingency operating base (COB) security forces—even retransmission (RETRANS) security.

The reason commanders are not using COLTs as part of their observation plans is because brigade fire support NCOs (FSNCOs) are not getting involved with manning and training COLTs and then selling the COLTs' capabilities to the brigade combat team (BCT) leadership and the brigade fire support coordinator (FSCOORD).

Before the War on Terrorism (WOT), brigade FSCOORDs could sell the lethal aspects of what COLTs and other observers brought to the battlefield due to extensive training that the brigade FSNCOs planned and executed. Now, with the limited use of lethal fires and the lack of fire support training, brigade FSNCOs and FSCOORDs have neglected the COLTs' capabilities and their abilities to gather intelligence.

In the past, when the fire supporters were assigned to one Field Artillery (FA) unit, it was simple for the brigade FSNCO to be involved with manning and training all fire support personnel assigned to that brigade, including COLTs. Now, with the fire support personnel being assigned directly to maneuver units, it is more difficult for the brigade FSNCOs to accomplish this task, but not less important.

To become involved actively with the manning and training of fire support personnel and COLTs within the brigade, the FSNCO first must build a good working relationship with the brigade and battalion command sergeants major (CSMs). By doing this, he can convince the CSMs of where the best places are in the brigade to assign fire supporters. Next, the FSNCO actively must get involved with the brigade's planning cell and put specific fire support training events on the brigade's training calendar. This will allow the FSNCO to conduct the fire support training and ensure that the COLTs are trained properly.

According to Appendix F of *Field Manual* (*FM) 3-09.42 Tactics, Techniques and Procedures (TTPs) for Fire Support for Brigade Operations,* the COLT's mission is to provide the brigade commander with high-technology observation teams dedicated to executing fires throughout the depth of the brigade's battlespace. This mission includes calling for conventional artillery and rocket fires, providing laser designation for precision-guided munitions (PGMs). Originally conceived to designate for Copperhead, COLTs can provide final ballistic guidance for any munition requiring reflected laser energy.

As a secondary mission, COLTs provide reconnaissance and surveillance for the brigade. It is that secondary mission that has been forgotten and what the brigade FSNCOs must focus their training plans on.

Effective Use of COLTs. With new technology in today's Army, the observation plans in BCTs have replaced the traditional observers with unmanned aerial vehicles (UAVs). These UAVs are valuable assets, but their employment is limited by weather conditions and time, leaving gaps in observation plans. This is where the COLTs can be most effective—for example, if weather conditions prevent a planned UAV flight and the BCT has a COLT positioned on an OP watching the same area in which the UAV would have been used. The BCT then can provide and emplace observers on the named area of interest (NAI).

COLTs also can occupy OPs, taking a proactive role in the countermortar and counterrocket fight in Iraq and Afghanistan. Too many BCTs are relying solely on radar acquisitions to determine where enemy insurgents are firing their indirect fire systems from.

The Q-36 and Q-37 radar systems are among the best assets the Army has to determine the points of origin (POOs) of enemy indirect fire, but because the enemy must fire his weapons before these systems can acquire the POOs, the BCT has to be reactive in its counterfire drill. This reactive method could cost Soldiers their lives.

If the BCT emplaces the COLTs in

positions observing historical POO sites, the BCT can maneuver on the enemy before the enemy can establish a mortar or rocket position. The BCT's posture then becomes proactive and, most likely, more effective.

With new observation equipment becoming available to the fire support community, the COLTs' observation capabilities have improved greatly. New systems such as the lightweight laser designator rangefinder (LLDR) and the fire support sensor system (FS^3) have enhanced the COLTs' target acquisition capabilities.

The LLDR easily can be dismounted and emplaced in virtually any type of terrain. It can detect targets up to 10 kilometers away accurately within 10 meters and has night-vision capabilities. It also is equipped with a laser designator that can paint a target for laser-guided munitions up to eight kilometers.

The FS^3 can be mounted on the M707 Knight vehicle and identify targets up to a range of 20 kilometers away with an accuracy of one meter. It also has the same designating capabilities as the LLDR along with night vision.

Even older equipment can be used effectively—equipment such as the AN/TVQ-2 ground/vehicular laser locator designator (G/VLLD) and the MARK-7 hand-held laser device, that the majority of COLTs have while waiting to be fielded with the new LLDR and FS^3 systems.

The G/VLLD can be mounted on the M707 Knight vehicle as well as dismounted in various types of terrain. It has the capability of locating targets up to a range of 10 kilometers with an accuracy of 10 meters and can designate up to five kilometers. It also can be equipped with the AN/TAS-4D or 4B thermal night sight that can detect a target's heat signature up to a range of five kilometers. The MARK-7 can locate targets up to a range of 10 kilometers with an accuracy of 10 meters.

Although these older systems are not as accurate as some of the Army's newest technology, they still can be valuable assets in the BCT's observation plan and in the proactive countermortar/counterrocket fight.

COLTs have a rich history of being highly trained observers and intelligence gatherers. But in the counterinsurgency fight, their excellent reconnaissance and surveillance capabilities that can help win WOT have been forgotten, leaving COLTs to perform other missions.

Brigade FSCOORDs must sell the COLTs' capabilities and ensure COLTs are used to their fullest potential.

Sergeant First Class James A. Brandt, Field Artillery (FA), is a Combat Observation Lasing Team (COLT) Observer/Controller at the National Training Center, Fort Irwin, California. His previous assignments include being a Company Fire Support NCO for 3rd Stryker Brigade Combat Team, 2nd Infantry Division, at Fort Lewis, Washington; a COLT Chief for 1st Brigade, 3rd Infantry Division, at Fort Stewart, Georgia; and a Forward Observer for the 9th Infantry Regiment at Fort Ord, California, and later at Fort Lewis, Washington. He has deployed in support of Operation Iraqi Freedom as the Company Fire Support NCO for C Company, 52nd Battalion, 3rd Infantry Regiment (C/52-3 IN), 2nd Infantry Division, from Fort Lewis; and Operation Just Cause as a Forward Observer/Radio-Telephone Operator for A/2-9 Infantry Regiment, 7th Infantry Division from Fort Ord.

Oklahoma ARNG Tests HIMARS Air Mobility

The Oklahoma Army National Guard (OKARNG), 1st Battalion, 158th FA (1-158 FA), tested the air mobility capability of the High-Mobility Artillery Rocket System (HIMARS) on 25 April.

The 1-158 FA, with assistance from the 58th Airlift Squadron from Altus Air Force Base, loaded three HIMARS launchers and two high-mobility multipurpose wheeled vehicles (HMMWVs) onto two US Air Force C-17 cargo aircraft in less than 30 minutes and then flew from Fort Sill, Oklahoma, to Fort Smith, Arkansas.

To replicate Iraq- and Afghanistan-like conditions, most of the flight was flown at a low-level in an attempt to evade "enemy" radar and anti-aircraft fire. At the Fort Smith airport, the five vehicles were unloaded from the aircraft in less than 10 minutes, and the convoy drove to Fort Chaffee for a successful live-fire exercise before returning to Fort Sill.

The 1-158 FA is among the first units to receive HIMARS. Nearly 20 years ago, the 1-158 FA was among the first FA units to receive the M-270 Multiple-Launch Rocket System (MLRS) that they used in support of Coalition Forces during Operation Desert Storm (ODS).

After ODS, the Army saw the need for a new rocket-launch system as effective as the M-270 MLRS, but not as large and heavy. On 12 April, after 10 years of development, Lockheed Martin began full-rate production of the HIMARS launcher at its manufacturing facility in Camden, Arkansas. The OKARNG 1-158 FA has been assigned nine of the 114 HIMARS vehicles built to date.

HIMARS can be airlifted by a variety of aircraft while the M-270 can only be loaded on one US Air Force aircraft—the C-5 "Galaxy." HIMARS is built on a wheeled rather than a tracked chassis. It has a single rather than a dual six-pack of rockets, but HIMARS can launch the entire MLRS family of munitions. The rockets are contained in a launcher housing mounted on a medium tactical vehicle 5-ton truck chassis.

CPT Geoffrey J. Legler
PAO, 1-158 FA
Oklahoma Army National Guard

Members of Battery C, 1st Battalion, 158th Field Artillery, Oklahoma Army National Guard (OKARNG), chain down a High-Mobility Artillery Rocket System (HIMARS) launcher in the "belly" of a US Air Force C-17 cargo aircraft on 25 April. (Photo by CPT Geoffrey J. Legler, OKARNG Public Affairs)

5-5 ADA Deploying with a New Mission

By Major Stephen Clay Goff, ADA, and Second Lieutenant Steven B. Wright, ADA

SSG Sean Ciardi, 5th Battalion, 5th Air Defense Artillery (5-5 ADA), bore sights a Lightweight Countermortar Radar (LCMR) at Combat Outpost Corregidor, Iraq. (Photo by 1LT Michael Ratcliff, 5-5 ADA)

The *Dragonslayers* of the 5th Battalion, 5th Air Defense Artillery (5-5 ADA), I Corps**,** Fort Lewis, Washington, are deployed in support of Operation Iraqi Freedom (OIF) 07-09. The task of manning, training and deploying six subordinate elements is challenging. However, the challenge of simultaneously manning, training and deploying six subordinate elements for six different nonstandard missions is monumental.

Performing Diverse Missions. The 5-5 ADA was an Avenger battalion comprised of a headquarters and headquarters battery (HHB), three Avenger batteries and a maintenance company. Only a few months before deploying in 2006, the battalion leaders were huddled around a conference room table stabilizing 36 Avenger crews for a standard semi-annual Avenger gunnery at Yakima Training Center, Washington.

Today in Iraq, the 5-5 ADA Soldiers, with 12 attached Sailors, are performing six nonstandard missions. A Battery, 5-5 ADA (A/5-5 ADA) *Assassins* are protecting the Coalition Forces and assets from insurgent indirect fires as a counter-rocket, -artillery, and -mortar (C-RAM) intercept battery. The B/5-5 ADA *Bushwhackers* are operating a division detainee holding area, providing convoy security for division senior leaders and critical off-base operations, and providing contingency short-range air defense protection for critical assets. The C/5-5 ADA *Cold Steel* Soldiers are serving as a C-RAM sense and warn battery, providing early warning of indirect fire attacks at six separate forward operating bases (FOBs). A Sentinel section and platoon are providing aerial situational awareness

5-5 ADA *Dragonslayers: Willing and Able*

Air Defense forces consistently have demonstrated the ability to adapt rapidly to new environments and changing conditions and have always provided tremendous flexibility to warfighting commanders. While there are many examples of this versatility, there is none more current than the recent history of the *Dragonslayers* of the 5th Battalion, 5th Air Defense Artillery (5-5 ADA).

5-5 ADA is deployed in support of Operation Iraqi Freedom (OIF) 07-09. However, few people know that these Soldiers are employed at more than a dozen different forward operating bases (FOBs), executing six separate nonstandard mission sets and supporting four different major subordinate commands in Iraq. Not one of those missions has an approved modified table of organization and equipment (MTOE), and only the Sentinel mission has an approved mission training plan.

The battalion has been in a continuous state of change during the past two years, and those experiences, coupled with a focus on small unit readiness and teamwork, helped set the conditions for the unit's successes.

For the better part of three decades, the Soldiers of 5-5 ADA defended the skies over the Republic of Korea. In October 2005, as part of the Army's Integrated Global Presence and Basing Strategy, the battalion packed up and moved to Fort Lewis, Washington.

Despite 5-5 ADA's initial manning at less than 50 percent strength, the unit began an aggressive return-to-readiness campaign. The battalion converted to an Avenger pure configuration, activated a new maintenance company, fielded 36 reset Avengers and four Sentinel radars and conducted new equipment training (NET). Less than 90 days after completing NET, the battalion completed its first Avenger gunnery and Stinger live fire at the Yakima Training Center, Washington. Five weeks later, the battalion passed the I Corps command inspection. Shortly thereafter, the realities of the Army Force Generation (ARFORGEN) model hit.

As a unit in the Reset-Train phase of the ARFORGEN model, with no pending theater mission requirement, the battalion was at the bottom of the priority list for critical resources and at the top of the list for essential post support requirements.

The 5-5 ADA *Dragonslayers* quickly learned to treat the inevitable taskings as missions, leveraging each event for maximum training value. Throughout the summer of 2006, more than 290 5-5 ADA Soldiers deployed to six different states to perform a myriad of diverse missions.

One Avenger platoon supported the Reserve Officer Training Corps (ROTC) Warrior Forge land-navigation training site for the entire summer. The platoon gained valuable training on troop leading procedures, field craft and sustainment operations. Daily coordination with the committee chief and his staff provided liaison training, and the extended mission also was a great team-building experience.

Headquarters, Headquarters Battery (HHB), 5-5 ADA Soldiers volunteered for a month-long mission to support the Japanese Self-Defense Ground Force combined arms live-fire exercise at Yakima Training Center. The mission

through air defense and airspace management (ADAM) cells to brigade combat teams (BCTs) and divisions across Iraq. The battalion headquarters is serving as a garrison headquarters and is responsible for the security and basic life support of more than 15,000 Soldiers and civilians.

Manning and Training for New Missions. Shortly after 1 October 2006, without a formal warning or deployment order, the battalion proactively began reorganizing into the anticipated OIF mission structures. The personnel challenges were significant, but before critical mission-specific training could begin, the units had to be manned.

A Battery's personnel requirements for the anticipated OIF mission were twice the modified table of organization and equipment (MTOE) authorized strength. B Battery requirements exceeded its on-hand strength by more than 39 percent. Manning C Battery was the most problematic because it had just redeployed from OIF in May 2006. Post-deployment turbulence and a simultaneous conversion from a Bradley Stinger Fighting Vehicle (BSFV) unit to an Avenger unit dropped the unit to less than 50 percent of its projected personnel requirement.

Additionally, manning of the units had to be synchronized carefully with the system-specific predeployment training plans. Our early deployers, A and B Batteries, were given priority for personnel fill. With no expected company-level missions for HHB or D Company, the units provided a partial solution to personnel shortages. The units provided mechanics, cooks, fuelers and clerks to source the deploying units.

However, the shortages were not simply about numbers. Based on required skill sets, the majority of the deployment positions would be filled best by Military Occupational Specialties (MOS) 14S Air and Missile Defense (AMD) Crewmember and MOS 14J Air Defense Command, Control, Communications, Computers and Intelligence (C^4I) Tactical Operations Center (TOC) Enhanced Operator/Maintainer qualified Soldiers.

Security clearances were required for the majority of deployment positions. The normal duties of many of our non-Air Defense Soldiers did not require a security clearance, so the battalion S2 expedited the processing of interim security clearances. The Air Defense Branch at Human Resources Command in Alexandria, Virginia, also provided critical external support by assigning additional 14J and 14S Soldiers to the unit, despite the fact that the unit was already overstrength for the core Air Defense mission. Once the battalion established a solid personnel foundation, it was time to begin training.

The *Dragonslayer* Soldiers' dedication, versatility and professionalism enabled them to master a new set of individual, collective and leader skills in a matter of months. In October 2006, most *Dragonslayer* Soldiers and leaders knew little about equipment such as the Wireless Audio Visual Emergency System (WAVES), the Phalanx Gun System, the Rapid Aerostat Initial Deployment (RAID) System or the Lightweight Countermortar Radar (LCMR). They had no experience running a detainee holding area, integrating into a base defense operations center (BDOC), operating an engagement operations center, writing a statement of work for a multimillion-dollar project or managing utilities for a city with a population of more than 15,000 people. Yet the adaptable leaders and Soldiers, with the help of many individuals and organizations from across the US, developed and executed a training plan that allowed the successful assumption of a diverse set of combat missions.

Unfortunately, 5-5 ADA simply could not roll the battalion to the field for a progressive series of individual, crew, platoon

provided an excellent, externally funded training opportunity to improve battery readiness in deployment, command and control, family readiness group and sustainment.

One company from 5-5 ADA traveled to northern Washington to support an I Corps wild land firefighting mission, which provided another externally funded small unit training opportunity in command and control, physical fitness and team-building.

The battalion, on the bottom of the funding priority, leveraged an externally funded Joint Task Force-North (JTF-North) mission to improve individual, leader and collective training for a Sentinel platoon and battalion command and control element. The mission enabled the 40-Soldier team to deploy to the Canadian border as part of an interagency task force. This was an extraordinary opportunity for Sentinel Soldiers to train on their military occupational specialty (MOS), and the event fit perfectly in their return-to-readiness glide path.

These nonstandard missions were not training *distracters*. On the contrary, they provided valuable lessons to Soldiers, leaders and collective units. The lessons included how to adapt to different environments and conditions and increase small unit readiness and teamwork that proved essential for the challenging nonstandard Operation Iraqi Freedom (OIF) missions that were right around the corner.

Although 5-5 ADA is a great example of ADA forces' agility, it is just one example of ADA and its air and missile defense (AMD) capabilities. Today, Patriot forces are forward deployed from the Pacific to the Middle East, including the 1-7 ADA (Patriot), which just completed the first battalion rotation to the Republic of Korea, and Air Defense Airspace Management (ADAM) cells, which are supporting brigade combat teams (BCTs) and divisions throughout Iraq and Afghanistan. Also, Army Air and Missile Defense Commands (AAMDCs) are providing AMD options to combatant commanders, and ADA forces are protecting the National Capital Region (NCR).

Despite the complexity or difficulty of the mission, ADA is always *Willing and Able* to answer the nation's call.

LTC Daniel P. Sauter III, ADA
Commander, 5th Battalion, 5th ADA
Fort Lewis, Washington.

SSG Spencer Williams, 5th Battalion, 5th Air Defense Artillery (5-5 ADA), is on the lookout for spot fires that may jump the road which is serving as a containment line for wild fires in northern Washington, 17 August 2006. (Photo by SFC Terrence Hayes, 28th Public Affairs Detachment)

and battery situational and field training exercises (FTXs) due to the diverse missions, different deployment timelines and the limited availability of nonstandard equipment sets. Instead, the battalion staff developed and synchronized major training events and timelines, and then battery leaders refined the plans and executed vigorously.

A Battery sent eight Soldiers to a seven-month Navy C-RAM Maintainer Course and 36 Soldiers to a six-week Navy C-RAM Operator Course in San Diego, California. The remaining Soldiers received training in Forward Area Air Defense (FAAD)/Air and Missile Defense Workstations (AMDWS), WAVES and LCMR training from product management teams at Fort Lewis.

Because there is only one C-RAM equipment training set, the battery only had one opportunity for collective training. The collective training event was a 10-day mission readiness exercise (MRE) at Fort Bliss, Texas. The exercise included three days of crew-level training, two days of live fire and, more importantly, a three-day simulation-driven exercise. The simulation phase of the exercise allowed crews to experience a multitude of different scenarios repetitively to exercise and master critical battle drills. B Battery's mission-specific training was a challenge due to the unit's diverse missions. It executed a deliberate training plan.

B Battery conducted Avenger and Manportable Air Defense (MANPAD) crew certifications, followed by a convoy and Stinger live-fire exercise at Yakima Training Center. It participated in a two-week, detainee-holding area certification course with the support of the 4th Training Support Brigade (TSB), 91st Division.

The *Bushwhackers* maximized the use of the simulation training facilities at Fort Lewis, training on individual and crew-served weapon marksmanship, reflexive fire, close-quarters marksmanship, Blue Force Tracker and convoy operations. Training culminated with an MRE that integrated detainee-holding area, convoy escort and Air Defense missions. The B Battery MRE also was the culminating training event for both of our Sentinel elements.

Sentinel predeployment training actually began before the unit knew what its future missions would be. During the summer of 2006, the Sentinel platoon supported a month-long Joint Task Force-North (JTF-North) Homeland Defense mission, which was funded by JTF-North. The unit deployed to the Canadian border and performed its core mission around the clock for an entire month. Additional FTXs with the 4th Stryker BCT (SBCT), 2nd Infantry Division, and B Battery prepared both Sentinel elements for their OIF missions.

C Battery's predeployment challenges were three-fold: first, the unit would not be manned fully until 60 days before deploying; second, it would have only one five-week window to conduct individual, collective and leader training on the new systems because there was only one set of C-RAM sense and warn training equipment; and finally, the battalion headquarters would be deployed already by the time the unit conducted its MRE.

The *Cold Steel* Soldiers overcame the challenges. C Battery initially focused on the myriad of common individual and leader theater-deployment training requirements while it waited for new personnel to arrive. After reaching an approximate 90 percent personnel fill, it conducted individual and leader training on the new C-RAM sense and warn equipment. It then rolled straight into a week-long MRE. The 11th ADA Brigade supported the battalion's deployment efforts by providing the observer-controller team for the exercise. Although it was a steep learning curve for the non-Sentinel Soldiers to become proficient on FAAD and AMDWS skills in a matter of weeks, the unit proved it was ready for its upcoming mission.

Deploying. 5-5 ADA deployed in four separate force packages, during a two-and-one-half month period. The phased deployment presented both challenges and opportunities. The biggest challenge for the battalion was conducting predeployment training for some elements while deploying others simultaneously. As A Battery returned from its MRE at Fort Bliss, B Battery was conducting its deployment ceremony. While the battalion headquarters was conducting training in Kuwait, C Battery was conducting its MRE at Fort Lewis.

The biggest advantage of the phased deployment was that the units' learned valuable lessons from the other units as each completed a predeployment task. From Soldier-readiness processing to airfield manifesting, leaders continuously shared insights with follow-on units. Therefore, each deployment became more efficient and effective.

The keys to 5-5 ADA's accelerated transformation were anticipatory planning and taking advantage of nonstandard training opportunities to continually improve individual and small-unit readiness. Rather than waiting until the battalion received a formal deployment order, 5-5 ADA developed and executed a complex theater-specific manning, training and equipping plan. I Corps' early approval and resourcing of the theater-specific transformation process were essential to the battalion's success. While funding was limited before the receipt of a deployment order, the unit leveraged externally funded training opportunities including a JTF-North and wild land firefighting support missions and USMA summer training support to improve individual, leader, and small-unit collective readiness.

In less than four months, the always *Willing and Able* 5-5 ADA Battalion overcame monumental challenges transforming from an Avenger ADA Battalion into six separate units conducting diverse nonstandard missions across Iraq in support of the US' War on Terrorism (WOT).

Major Stephen Clay Goff, Air Defense Artillery (ADA), is the Battalion Operations Officer (S3) for the 5th Battalion, 5th ADA (5-5 ADA), Fort Lewis, Washington, and the Garrison Command Operations Officer of Contingency Operating Base (COB) Speicher, Tikrit, Iraq. Previous assignments include Operations Officer for the Center for Army Lessons Learned (CALL) at Fort Leavenworth, Kansas; Team Chief and S3 for 1-346 ADA, Training Support Battalion (TSB) at Camp Shelby, Mississippi; Commander of C Battery, 1-3 ADA (C/1-3 ADA) at Fort Stewart, Georgia; Assistant S3 of 1-3 ADA; and as a Stinger Platoon Leader, Avenger Executive Officer and Assistant Division Air Defense Officer with 4-3 ADA in Kitzengen, Germany. He has a Masters Degree in Human Resource Development from Webster University, St. Louis, Missouri.

Second Lieutenant Steven B. Wright, ADA, is an Education Officer for COB Speicher, Tikrit, Iraq. He also served as the Assistant S4, 5-5 ADA. Before being awarded a commission from the US Army Officer Candidate School in 2006, he served as a Military Occupational Specialty (MOS) 37F Psychological Operations Specialist and deployed twice with A Company, 9th Battalion, 4th Psychological Operations Group (Airborne) in support of Operation Iraqi Freedom (OIF). He and his unit deployed in 2003 attached to 10th Special Forces Group to Constanta, Romania; and then in 2004, attached at first to the 82nd Airborne Infantry Division and then reattached to the 1st Marine Division in the Anbar Province, Iraq.

SGT Matthew Smith, a turret gunner with G Company, 2nd Battalion, 32nd Field Artillery (G/2-32 FA), 4th Brigade Combat Team (4 BCT), 1st Infantry Division, observes his surroundings during a patrol in the Mansour district of Baghdad, Iraq, 30 July. (Photo by SGT Tierney Nowland, 982nd Combat Camera Company)

Fires Battalion in the IBCT

—FFA HQ or Maneuver Task Force

By Captain Christopher R. Kliewer, FA

The War on Terrorism (WOT) continues to challenge the traditional roles assigned to the Army's combat arms branches. While Armor and Infantry adjust their tactics, techniques and procedures (TTPs) for fighting in Iraq and Afghanistan, Field Artillery (FA) continues to span the full gamut between fire support and ground maneuver. Artillerymen in Iraq and, to a more limited degree in Afghanistan, frequently serve as provisional infantry or cavalry. This condition reflects the high demand for "boots on the ground" as well as the proportionally limited requirement for cannon artillery, particularly in Iraq.

The infantry brigade combat team (IBCT) continues to find operational environments that challenge its traditional organization. The nonlinear areas of operations (AOs) of Iraq and Afghanistan require that a brigade commander either break up his artillery into several platoon-sized cannon elements to support his maneuver battalions or consolidate the brigades' fire support into a single battery or platoon. At the same time, he tasks his fires battalions with AO ownership and maneuver missions. This response to the demands on the ground is well-chronicled and comes as no surprise to Artillery units deployed in support of Operations Iraqi Freedom (OIF) and Enduring Freedom (OEF).

SGT Gerado Alvarado, from 2-15 FA, 2 BCT, 10th Mountain Division, out of Fort Drum, New York, provides security with his .50-caliber rifle during a medical-civic action program in Mahmudiyah, Iraq, 17 August. (Photo by MSgt Jonathan Doti, USAF)

Still, the IBCT fires battalion habitually assumes responsibilities inherent with the force field artillery headquarters (FFA HQ), regardless of the number of cannons employed in the brigade's fight or the size of its maneuver tasking. While this responsibility is doctrinal on the linear AO and makes sense in many nonlinear AOs, it does not apply universally to conditions seen in operational environments requiring a very limited amount of organic cannon artillery. Likewise, the mere fact that an IBCT fires battalion's traditional role is limited does not warrant tasking it to carry the additional load of a maneuver mission.

The fires battalion in the IBCT can be the FFA HQ or a maneuver task force (TF), but never both simultaneously. A proposed "doctrinal threshold" can delineate when the IBCT fires battalion provides a maneuver or fires HQ within the brigade's operations. The use of at least a single battery of traditional artillery breaks this threshold, thus the fires battalion gains assignment of the FFA HQ at the exclusion of any maneuver mission. Likewise, the sub-threshold requirement for less than a battery of cannon fire support enables the battalion's assignment as a maneuver TF.

FFA HQ versus Maneuver TF. The fires battalion in an IBCT is designed to be a brigade asset to support and shape the brigade fight. It does not seize or control battlespace in the traditional linear conflict. It is concerned with maneuver only to the extent required to support maneuver properly. The fires battalion provides timely and accurate indirect fires in support of the brigade commander's maneuver with the fires battalion commander, essentially, serving as the fire support coordinator (FSCOORD), (despite the existence of a separate FSCOORD billet on the brigade's staff). This relationship between the fires battalion and the brigade it supports dictates the requirements of the fires battalion staff.

The fires battalion staff serves as an extension of the brigade staff, conducting parallel planning in conjunction with the brigade's military decision-making process (MDMP) and producing its FA support plan (FASP) or operations order (OPORD) simultaneously with that of the brigade's OPORD.

This relationship dictates the fires battalion staff's size and composition. The FA staff is smaller and more specialized than a maneuver staff with an S2 shop designed to analyze enemy indirect threats, a fire direction cell (FDC) meant to coordinate the battalion's fires while meteorological (Met), survey and radar sections are equipped and tasked to support the artillery fight.

The IBCT's maneuver elements operate fully one echelon below the brigade and have subordinate maneuver elements and staffs to meet the demands placed on them. Each controls an AO, determines its own maneuver plan and works within the brigade commander's intent to develop its own fight. Each relies on the fires battalion's support to shape and set conditions for its maneuver while incorporating battalion organic mortars and coordinating close combat attack (CCA) and close air support (CAS) to satisfy its essential tasks. These staffs are designed to meet these requirements with robust S2 shops and organic fire cells at the battalion level and fire support teams (FISTs) at the company level.

The differences between the maneuver and fires battalion modified tables of organization and equipment (MTOEs) reflect their separate yet supportive traditional missions. They also highlight key discrepancies in these organizations' focuses. The subordinate maneuver commander is concerned with his own AO, pays attention to his area of interest (AI) and executes his mission within the brigade commander's intent. Conversely, the IBCT's fires battalion commander is concerned with the entire brigade's AO, must pay close attention to the brigade's AI and executes an OPORD or a FASP to satisfy the brigade commander's essential tasks for fire support or field artillery. The fires battalion's relationship with the IBCT elements naturally defines it as the FFA HQ for the traditional fight.

The nonlinear fight offers less clarity in the FFA HQ assignment while providing for a wide array of reorganization and tasking for the IBCT fires battalion. Every brigade's AO varies, requiring differing amounts and types of fire support. A brigade in Iraq might use a single artillery platoon to provide counterfire while a brigade in Afghanistan employs all 16 tubes in a decentralized fashion. The assignment of these brigades' FFA HQs varies with no standard argument for a threshold as to when a fires battalion surrenders its FFA HQ assignment for a maneuver role.

More often than not, the fires battalion is assigned its traditional FFA HQ role while receiving the additional tasking of AO management and maneuver, stretching the limits of its batteries and staff. This scope of mission for the fires battalion is unnecessary when the brigade organizes itself properly and clearly delineates the different requirements for the brigade fight and that of its subordinate battalions.

A threshold should exist that delineates the role of maneuver and the role of fire support for the IBCT fires battalion. A brigade commander and his staff must identify when this threshold is achieved and focus its fires battalion as either an FFA HQ or a subordinate maneuver battalion.

Fires Battalion as a Maneuver TF. The IBCT fires battalion's role in the counterinsurgency (COIN) environment must be a function of the brigade commander's requirement for organic cannon

fire support. OIF consistently requires a fraction of the artillery firepower provided by an IBCT fires battalion while the demands of AO ownership force brigades to use their Artillery as an economy-of-force maneuver element. A fraction of Artillery, primarily used in the counterfire fight, must meet the requirements identified by the brigade commander and his staff to defeat or neutralize the enemy threat and fully be capable of supporting maneuver operations within the BCT AO. This fraction, whether two cannons, a full platoon or a battery, must be identified early in the brigade's course of action (COA) development and be defined clearly with purpose and tasks.

A maneuver role may be designated for the fires battalion HQ once the traditional cannon artillery contingent is defined below the level of a single battery and more than half of all traditional cannon combat power in the battalion is left unassigned.

Further, the brigade can task organize other traditional maneuver units to work within the newly formed task force as a means to weight its efforts properly, but only once the fires battalion solely focuses on a maneuver mission. This mission requires the relief of any aspects of the traditional FFA HQ's inherent responsibilities. All traditional artillery assets should be detached fully to the IBCT's control, while the brigade fires cell assumes the FFA HQ.

Once the FFA HQ is assigned to the brigade fires cell and the fires battalion is assigned a maneuver mission, responsibilities for support of the artillery are assigned to the brigade fires cell. This includes planning and controlling of radar assets, coordinating for Class I, IV and V, positioning of the guns, surveying and assigning essential FA tasks (EFATs) to the DS cannon element. The FA battalion must detach all artillery support and enablers to the brigade fires cell to facilitate the FA mission. This includes Met, survey and maintenance support packages.

Also, the FA battalion's forward support company (FSC) must redirect its ammunition account to the brigade special troops battalion (BSTB) and enable the artillery element to draw Class V from the BSTB's support platoon. This increases the responsibilities of the firing element's platoon leader as well as escalates the direct involvement of the brigade's lethal fires cell with this newly assigned fires delivery element. The brigade effects coordinator (ECOORD) truly becomes the FSCOORD for the brigade's operations but only after he has assumed all fire support responsibilities and the fires battalion commander clearly has been relieved of this traditional role. The fires battalion staff then can focus its limited assets on the maneuver mission once its traditional artillery mission has been transferred to the brigade. This clear delineation of mission allows subordinate elements to focus Soldiers on maneuver tasks while the staff can transition to supporting the battalion fight rather than the brigade's overall effort.

The Fires Battalion as the FFA HQ. While the fires battalion traditionally may be used in a limited or decentralized role in the environments presented by OIF and OEF, this scenario should never force a brigade to default to tasking it as a maneuver battalion. Like the consideration for FFA HQ relief of mission in exchange for maneuver, the decision for the FA battalion to be the FFA HQ must be a reflection of the brigade's need for organic cannon support. The fires battalion must concentrate solely on providing artillery cannon fire support to the brigade fight when the required cannon assets are identified to be of a battery or more. This scenario is more common in OEF.

A battery represents *half* of the battalion's firepower and requires the assets organic to an Artillery staff to support its efforts. A battery also presents a greater challenge for a brigade fires cell to manage as a staff section while a battery commander cannot rely on the BSTB to provide the necessary support functions. This tasking is best assigned to the fires battalion, thus the battalion is the FFA HQ. The battalion commander maintains his place as the brigade's FSCOORD while his staff maintains its traditional responsibilities supporting artillery fires in the brigade fight, whether in a centralized or decentralized mode.

Still, the fires battalion's role can present an unorthodox configuration when its cannons are split out to provide small DS packages to maneuver elements in the brigade. This mission set might require less than the full complement of cannons the battalion has to offer; but with the commitment of a battery or more of traditional artillery, the fires battalion should not be tasked with maneuver—no matter how limited the AO assigned to the battalion.

A limited maneuver tasking ultimately requires traditional maneuver forces be reassigned to the fires battalion HQ. This reorganization provides enough combat power to justify the maneuver mission minimally yet inevitably reduces the capabilities of the brigade's infantry and reconnaissance, surveillance and target acquisition (RSTA) formations.

The Artillery staff, small in nature and fully committed to supporting the brigade's artillery fight, cannot plan and support a coherent maneuver fight effectively. Instead, all unnecessary traditional cannon artillery sections or platoons should be attached to the brigade's traditional maneuver battalions to improve their troops-to-tasks ratios while the fires battalion focuses on the indirect fire mission.

Fires or Maneuver: Clarity of Mission. The IBCT commander and staff must focus their artillery assets. The contemporary operating environments (COEs) in Iraq and Afghanistan continue to challenge the structure of the IBCT. But "double-tasking" the fires battalion as both the FFA HQ and a maneuver task force should be avoided when developing a COA to meet the operating requirements in OIF or OEF.

Ultimately, the IBCT's Artillery must have a clear and concrete mission that allows it to organize its staff and batteries while ensuring Soldiers focus on the proper set of skills. Artillerymen are dynamic, versatile Soldiers who can be outstanding fire supporters or impact the brigades' fight as provisional infantry. Senior leaders enable their Redlegs to maximize their contributions when they ensure the fires battalion is focused on fires or maneuver, but not both simultaneously.

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National Guard Air Defenders Take Virtual Training to New Heights

By Lieutenant Colonel Charles W. Moore, EN

Army National Guard (ARNG) Air Defense Artillery (ADA) Soldiers recently participated in Amalgam Arrow 07-06, a virtual-training exercise that tests the ability to detect and defend against unknown aircraft and cruise missiles flying in US airspace. This North American Aerospace Defense Command (NORAD)-sponsored event, conducted 28 to 30 March, included Air Force, Army, Coast Guard and Navy participants at 13 sites across the US.

Training Benefits. Amalgam Arrow uses distributed mission operations (DMO), a virtual-training concept that employs computer-driven simulations. The simulations allow military personnel to react to possible homeland defense incidents using state-of-the-art training devices at Battle Command System-Fixed (BCS-F) stations at the Western Air Defense Sector (WADS), Eastern Air Defense Sector (EADS) and at the Continental NORAD Region (CONR).

The Air Forces Northern Command (AFNORTH) at Tyndall Air Force Base (AFB), Florida, which manages DMO, provides persistent DMO capabilities and expertise supporting realistic and relevant training opportunities to warfighters in a networked environment.

DMO links geographically separated joint simulation facilities in a shared "synthetic battlespace" event and is a "perfect fit" for Air Defenders by providing state-of-the-art training for homeland defense missions, including the National Capital Region (NCR), Integrated Air

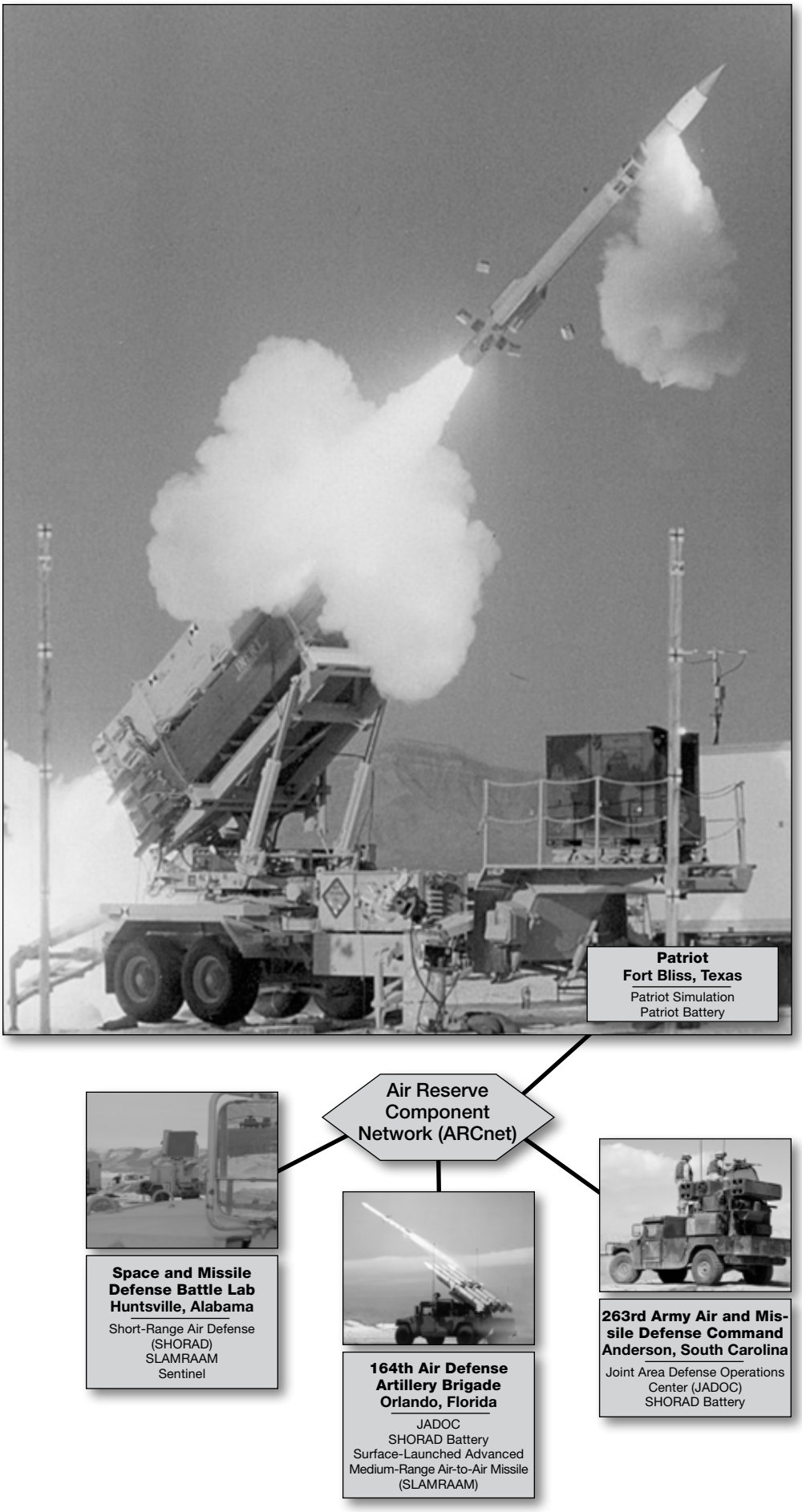

Figure 1: Amalgam Arrow 07-06, US Army Air Defense Artillery Simulation Network

Defense System (IADS) and Deployable Homeland Air and Cruise Missile Defense (D-HACMD) mission sets at multiple locations.

Amalgam Arrow provides home-station training capabilities for Army Air Defense (AAD) units including the 263rd Army Air and Missile Defense Command (AAMDC) in Anderson, South Carolina; and Florida's 164th ADA Brigade in Orlando, the 1st Battalion, 265th ADA (1-265 ADA) in Daytona Beach, and the 3-265 ADA in Sarasota (Figure 1).

In addition to becoming skilled at using DMO, Soldiers honed their skills in a myriad of areas including the protection of the NCR through the use of IADS, D-HACMD concept of operations (CONOPS) maintaining command and control, Avenger Table Top Trainer (TTT) and equipment, Stinger Troop Proficiency Trainer (STPT) and equipment, Patriot Fire Direction Center (FDC)/Launcher and associated equipment used in homeland defense AAD missions and Operation Noble Eagle (One) tactics, techniques and procedures (TTPs).

Successful Exercise. The exercise directors (senior NORAD leaders) conducted practice simulations on the first two days of the exercise and then staged a culminating event on 30 March.

Scenarios for the final exercise consisted of two separate events. Event one was a national security special event (NSSE) where a fictitious presidential funeral occurred in Oxnard, California (Figure 2). During the funeral, a Boeing 747 cargo jet was hijacked out of Los Angeles International Airport. Immediately, F-16 *Fighting Falcons* from Riverside

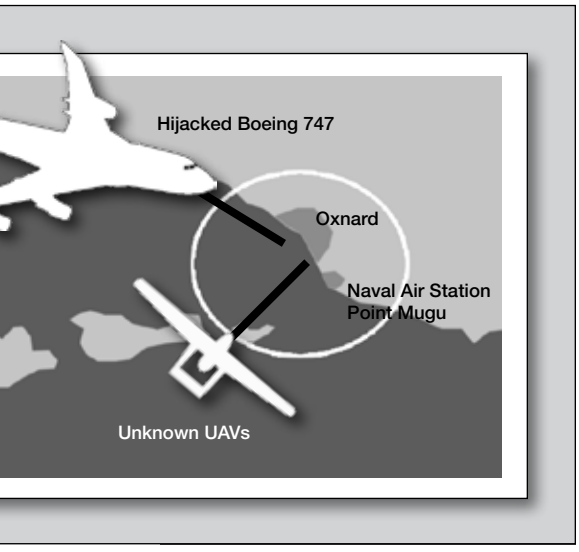

Figure 2: California Funeral Scenario

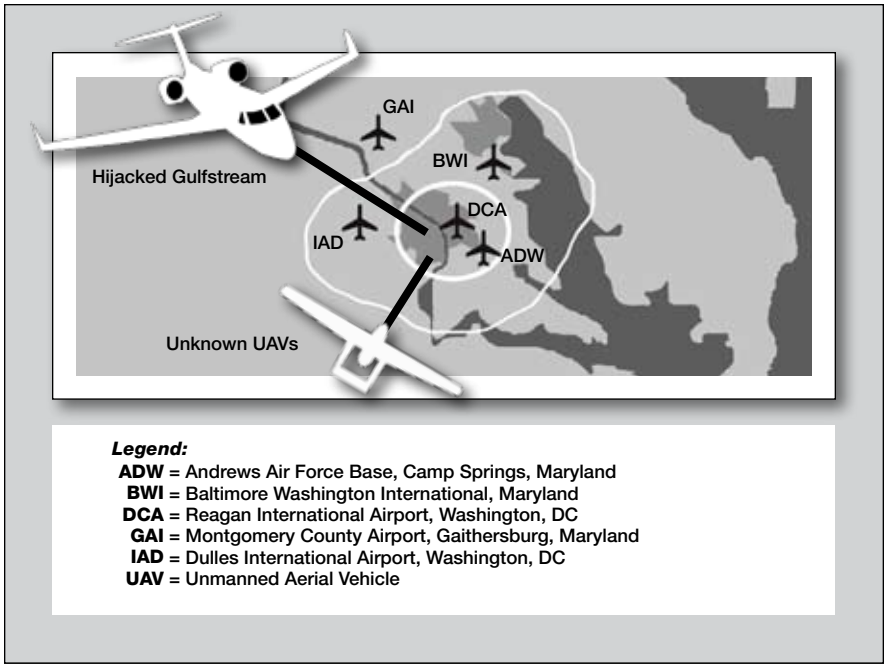

Figure 3: National Capital Region-Integrated Air Defense System (NCR-IADS) Scenario

AFB, California, scrambled to intercept. Concurrently, terrorists launched unmanned aerial vehicles (UAVs) toward the NSSE at Oxnard and a nearby Aegis cruiser. A US Coast Guard (USCG) helicopter visually identified the UAVs. A D-HACMD team, consisting of command and control assets from the 263rd AAMDC's Joint Area Defense Operations Center (JADOC) mobile Patriot and Avenger systems, was employed virtually at Naval Air Station Point Mugu to defend the airspace surrounding the NSSE.

The second scenario had terrorists hijack a Gulfstream charter jet that was targeting Washington, DC (Figure 3). Andrews AFB in Washington, DC, alerted fighters to intercept and try to divert the aircraft. A "citizen" called 911 to alert local law enforcement about what appeared to be two possible UAVs launched toward the NCR. In response, two USCG helicopters, based at Washington-Reagan International Airport, launched and provided visual identification of the UAV. The JADOC tracked the threat and provided command and control of the ground-based IADS defending the NCR. The IADS included Avenger, Sentinel and Surface-Launched Advanced Medium-Range Air-to-Air Missile (SLAMRAAM) systems.

These events occurred within a matter of minutes; requiring a seamless execution. ARNG Air Defenders rapidly responded, resulting in all threats defeated and a successful exercise.

"America's Shield." By the end of training year 2007, all ADA ARNG units from Ohio, Mississippi, Florida and South Carolina will have a DMO capability.

DMO-ADA provides realistic training opportunities for all ARNG ADA units preparing for homeland defense missions by integrating into inactive duty training (IDT) and annual training (AT) periods. It allows commanders to plan and execute scenarios at home stations and results in better trained Soldiers, ready to defend the homeland and truly be "America's Shield."

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Israeli-Hezbollah Conflict of 2006:
EBA in Joint Ops

By Colonel David J. McCauley, FA

The Israeli-Hezbollah conflict received varied coverage from the American press. One headline read, "Hezbollah Didn't Win." Another proclaimed, "Israel At Odds With Itself." Which one was accurate?

While the final outcome of the conflict is yet to be determined, lessons can still be learned. Foremost may be the potential holistic effectiveness of the effects-based approach (EBA) to joint operations as a modern example of fourth generation warfare.

As the ground war began, Israel planned to use quick ground maneuvers to cut Hezbollah's lines of supply and air power to shatter centralized command and control, leaving Hezbollah disorganized, unbalanced and insufficiently supplied. However, Hezbollah, operating from sophisticated fortifications and underground bunker networks, avoided the devastating Israeli air power.[1] The Hezbollah bunkers were stocked with high-tech weapons and enough supplies to facilitate operations for weeks, even months.

How, then, does Israel decapitate and demoralize this enemy?

To answer that question, the Israelis adopted an EBA to joint operations during the Israeli-Hezbollah conflict of 2006. Although employing this concept did not allow them to achieve all of their objectives, it did enable them largely to synchronize the elements of national power to realize their desired end state.

The evidence suggests the Israelis' EBA followed four lines of operations (LOOs)—combat operations, air and sea blockades, strategic communications and diplomacy—to coordinate the elements of national power (diplomatic, information, military and economic or DIME) to defeat the Hezbollah. The synchronized DIME elements worked across the Hezbollah adversary systems within the political, military, economic, social, information and infrastructure (PMESII) construct to create effects that achieve objectives to reach the desired end state. The end state: Compel the Lebanese people and government to rise up against a weakened Hezbollah, disarm them, accept a robust UN force and return Israeli Defense Force (IDF) Soldiers.[2] The results currently are ambiguous.

This article recognizes that the EBA adds value as a complementary component of the joint planning process derived from operational design at the theater-strategic and operational levels in fourth generation warfare. It defines EBA and fourth generation warfare with the concept of the strategic nature of the Arab-Israeli conflict. It examines the conflict to assess the Israeli's application of EBA along four LOOs to capture lessons learned and recommend a way ahead to the joint force commander.

What is EBA? There is a heated debate raging within the joint community as to the validity of the EBA to operations. The Joint Forces Command's (JFCOM's) Warfighting Center's *Commander's Handbook for an Effects-Based Approach to Joint Operations* states: "EBA focuses on improving our ability to affect an adversary's behavior and/or capabilities through the integrated application of select instruments of national power. The approach connects strategic and opera-

Israeli artillery fire at Hezbollah positions, 8 June 2006. (Photo by Dan Bronfeld, Israeli Defense Forces [IDF] Spokesperson)

tional objectives with operational and tactical tasks by influencing desired and undesired effects within the operational environment."[3]

JFCOM's EBA is more art than science, is flexible and fully integrates all the elements of national power—DIME—to achieve desired outcomes across the full spectrum of operations typical in 21st century fourth generation warfare. Scholarly opponents—to include Dr. Milan Vego, professor at the US Navy War College and Lieutenant General (Retired) Paul Van Riper, noted military theorist—argue that the EBA is more pseudo-science than art. Critics argue that EBA circumvents the operational-design process and is overly enamored with the science of accessing databases to determine links and nodes, thus confusing the detailed analysis of the PMESII and yielding multiple operational-level centers of gravity that obscure the true objective and complicate actions required to achieve the desired end state.[4] The PMESII construct is just one way to subdivide the adversary systems and is not intended to be the only viable model.[5]

In a recent joint doctrine note, the United Kingdom Chiefs of Staff state that the EBA neither replaces proven operational art nor is prescriptive. Furthermore, because the military is but one part of a nation's elements of power, a multidisciplinary and multi-agency approach must be synchronized under a holistic comprehensive concept. The note goes on to state that inherent to this approach is establishing a "common way of thinking" across all the elements of national power to include international organizations and nongovernmental organizations (NGOs) to coordinate a comprehensive and synchronized effort to achieve a strategic objective and desired end state.[6]

EBA is actions (tasks) directed at nodes (decisive points) conducted by component agencies (resources) that are coordinated across time and space within the relevant operating environment to create effects that achieve objectives to reach the desired end state. This can be done during planning using a construct that synchronizes LOOs (across a system consisting of PMESII) framed by centers of gravity that are aimed toward achieving objectives. It is important to note that tasks can be performed by more than just the military to create effects.

Measures of performance (MOPs) measure tasks, while measures of effectiveness (MOEs) measure effects.[7] MOPs and MOEs answer two questions respectively: Were things done right? and Are we doing the right things?[8]

Joint Publication 5-0 Joint Operations Planning defines effects as embedded in the joint operations planning process to help commanders and their staffs understand and measure conditions for achieving objectives.[9] EBA complements joint operations and allows the joint force commander to synchronize all elements of national power across complex adversary systems to achieve his aims.

Finally, EBA systems enhance planning and execution, to include measuring success in the ambiguous fourth generation warfare.

What is Fourth Generation Warfare? In Marine Corps Colonel Thomas X. Hammes' article in the *Armed Forces Journal,* he argues that the days of large conventional armies conducting decisive maneuvers against another large conventional army to achieve a quick, decisive victory are most likely in the past. Instead, fourth generation warfare exists in the challenging new global security environment shaped by the end of the Cold War and the September 11, 2001 terrorist attacks on our homeland. The world went from a "status quo environment" to a new and uncharted world with non-state actors attacking states with extraordinarily deadly force that spreads terror and uncertainty around the globe.[10] President George W. Bush captures the essence of fourth generation warfare in our National Security Strategy when he states, "America is threatened now less by conquering states than we are by failing ones. We are menaced less by fleets and armies than by catastrophic technologies in the hands of the embittered few."[11] The inability to narrow the enemy to an army or state and then defeat them creates the uncertainty and ambiguity that now defines our environment.

These new concepts (fourth generation warfare and EBA) run contrary to the Clausewitzian way of war. Clausewitz likely is "rolling over in his grave" at the idea that in fourth generation warfare the EBA focuses on using precision-guided munitions (PGMs) aimed at pinpoint targets causing minimal collateral damage to modify the behavior of entrenched transnational terrorists and the host nation's government. Yet, the nature of war, itself, has changed. It now resides in the political, social, economic, information and technical realms of nation states and non-state actors.

For this article, fourth generation warfare is defined as asymmetric warfare in which one opponent is a failed or failing state or non-state actor with a powerful networked ideology. The greatest threat is from the non-state actor. This failing state or non-state actor attacks the weaknesses of the stronger opponent by developing innovative strategies, custom-tailored tactics and primitive, yet advanced technologies. The state or actor consciously diverts its power outside the traditional military paradigm and emphasizes PMESII dimensions of warfare to achieve its aims. This is the reality of 21st century fourth generation warfare.

The Israeli-Hezbollah Conflict in Strategic Context. For more than 50 years, the US and the rest of the world nervously have monitored the Arab-Israeli conflict, fearing it might plunge the region and, eventually, the entire world into widespread war. The conflict has erupted into declared war between Israel and its Arab neighbors on five occasions and internally in two intifadas.

The US has supported Israel in all these

wars and remains a staunch ally, often at the expense of improved relations with other Arab nations.

The ongoing Israeli-Hezbollah conflict in Lebanon is the current focus of the US' and the world's military experts and governments who are anxiously waiting on the sidelines. Most regional experts are surprised that the IDF did not achieve another decisive victory quickly through operational maneuver against an opponent that, by all measurable war-fighting criteria, is vastly inferior.

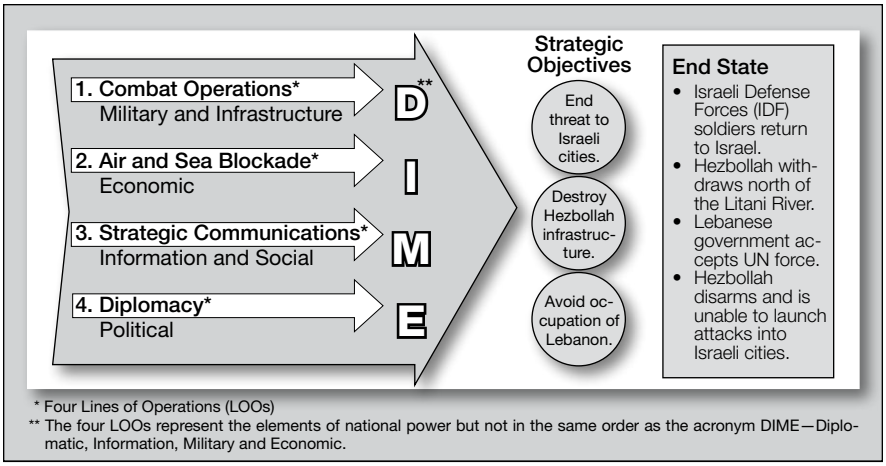
Israel is in a constant struggle for survival surrounded by hostile nations whose stated aims are to end its existence. Therefore, Israel's logical National Security Strategy is one of "pre-emptive self defense."[12] The state of Israel has been fighting in a fourth generation warfare context since it was established. Non-state actors, such as Hezbollah, Hamas and the Palestinians, clearly do not see themselves as military organizations. Rather, they view themselves as webs that generate the political power central to fourth generation warfare. The ongoing conflict against a well trained, extremely effective Hezbollah guerilla force in Lebanon is yet another example of fourth generation warfare.[13] The Israelis clearly understand the concept of using DIME to deter or compel an adversary to achieve a favorable political outcome.

EBA and fourth generation warfare are not new constructs. Evidence suggests that Israel adopted this EBA to warfare in the Hezbollah conflict of 2006.

Israel and EBA. As illustrated in the figure, EBA simplifies complex situations (such as the Israeli-Hezbollah conflict) to enable the joint force commander to integrate and synchronize DIME across the adversary systems within the PMESII construct to create effects that achieve objectives to reach the desired end state.

The literature clearly identifies the objectives and desired end state for both Israel and Hezbollah. The EBA construct used here and throughout the remainder of the paper is based upon my deduction through a systems perspective to derive the center of gravity, critical vulnerabilities and decisive points. Additionally, the effects, task or action taken, resource/component, MOPs and MOEs are deduced based upon the preponderance of the available evidence noted below.

The JFCOM's *Supplement One to Commander's Handbook for an EBA to Joint Operations* identifies governments, populations, economics and cities as "systems." EBA's ultimate aim is to alter or influence the target systems' behaviors or capabilities to render them more amenable to strategic and operational objectives through the multiple, integrated and simultaneous actions directed at key nodes and links.[14]



* Four Lines of Operations (LOOs)
** The four LOOs represent the elements of national power but not in the same order as the acronym DIME—Diplomatic, Information, Military and Economic.

Effects-Based Approach (EBA) Construct of the 2006 Israeli-Hezbollah Conflict. (The chart was designed by author based on his research, see Endnotes.)

The Israeli-Hezbollah conflict has many examples of an EBA in joint operations in fourth generation warfare. Yet, the results are ambiguous at this time. The IDF's strategic bombing campaign combined with precision warfare weakened Hezbollah's armed forces while, simultaneously, the IDF applied non-kinetic information operations (IO) to incite the Lebanese people and government to rise up against the Hezbollah—the Israeli government's strategic aim. The IDF's bombings were not massive, imprecise area bombing but rather limited precision bombing targeting Hezbollah infrastructure.

To understand Israel's application of EBA, one first must understand Israel's and the Hezbollah's aims and objectives. At the national-strategic level, the Israeli perspective is that the Arab world finally must recognize the Jews' inherent right to have a Jewish state. Ariel Sharon best stated the Israeli aims in a 2006 *New Yorker* interview. Sharon truly wanted to bring security and peace by establishing a security wall to facilitate the withdrawal from the West bank, recognize a Palestinian state and, at the same time, maintain a democratic Jewish state by not allowing the Palestinian right of return.[15] Additionally, Ehud Olmert sought international assistance to disarm Hezbollah and deter the advance of Iranian and Syrian influence in the region.[16]

Hezbollah's aims and objectives should not be confused with those of the Arab states. The Arab world does not recognize the inherent rights of an established Jewish state. The Hezbollah aims are essentially twofold: gain political power in Lebanon and among the Palestinians and freedom of action within the context of Syrian-Iranian relations.[17]

The Israeli theater-strategic objectives in this conflict are threefold: end the threat to Israeli cities by destroying Hezbollah's launch capabilities south of the Litani River, destroy Hezbollah infrastructure and avoid occupation of Lebanon. The Israelis' true desires are for the international community to legitimize the current status quo, which, many believe, favors them. Hezbollah, on the other hand, seeks to reduce Israel to its 1967 borders, which could facilitate the destruction of the Jewish state.

In short, the cease-fire is tenuous. The chance for a final peace will be long and arduous.

Assess the Four LOOs. One must examine the LOOs (combat operations, air and sea blockade, strategic communications and diplomacy) to assess their success, including the MOPs and MOEs within each LOO.

1. Combat Operations. Ehud Olmert responded to the kidnapping of two IDF soldiers with devastating air attacks and limited ground attacks south of the Litani River to punish the Hezbollah. The Israeli ground forces were held at bay while thousands of precision air strikes were sustained for more than 30 days, yielding ambiguous results. These operations were aimed at strategic target sets, such as bridges and roads, to cut-off Syrian resupply routes, command and control sites, strongholds and rocket launch sites.

This precision air campaign historically has not been the Israeli way of war. The Israelis traditionally have committed overwhelming simultaneous air and land combat power to bypass fortified areas, disrupt lines of communications (LOCs), isolate fortifications and wait for capitulation. If Olmert is successful in achieving his end state, then it also will send a clear message to the Arab world that standing up to Islamic extremism pays off.[18]

Olmert may envision Lebanon as the theater of operations and Hezbollah as his objective within the joint operations area. EBA may be the most effective means to achieve the strategic objectives and desired end state.

Israel's objective is to weaken Hezbollah's military apparatus within Lebanon south of the Litani River and contain the threat to the borders of neutral Lebanon. Thus, it is logical to consider Lebanon as the enemy's fortification that must be contained and cut-off. If this is the case, then Olmert is not sitting idly by waiting for capitulation. He simultaneously is applying DIME warfare aimed at achieving his end state.

At the time this article was written, there is little evidence or tangible battlefield damage assessment (BDA) to determine if the Israeli Air Force (IAF) or the IDF achieved critical damage to Hezbollah's indirect weapons launch capabilities. Israel has flown more than 15,000 fighter sorties and attacked more than 7,000 Hezbollah targets in Lebanon with minimal loss of life and equipment. The IAF was reported to have destroyed more than 70 percent of Hezbollah's arsenal of long-range rockets in the first hour of the campaign.[19] Yet, the fact that Israel's airpower could not stop the Hezbollah from firing hundreds of smaller Katyusha rockets into northern Israel, even on the last day of fighting, indicates the Israelis failed to achieve their desired effect.

Also, Israel anecdotally has claimed to have killed between 100 and 600 Hezbollah fighters to date, an estimated 15 to 25 percent of Hezbollah's initial force of approximately 3,000 fighters. This is difficult to measure as Hezbollah's tentacles reach a reserve depth of an estimated 10,000 fighters; this compares to 118 IDF losses out of an approximate 15,000 soldiers decisively committed at any one time during the conflict.[20]

The true MOE assessment is Hezbollah *still* is capable of launching rockets into Israel. Moreover, the second and third order effects of the destruction of Hezbollah buildings and crowded bridges with little military value feeds Hezbollah's propaganda efforts and enhances negative perceptions of Israel among the Lebanese people.[21]

The IAF attacks also have created second and third order effects by displacing more than 600,000 Lebanese citizens as refugees, creating a humanitarian crisis in Lebanon. The Lebanese people blame both Israel and Hezbollah for this plight. However, the majority of the Lebanese people regard Hezbollah as citizens and accept them in their borders.[22]

Finally, the IAF and IDF attacks do not seem to be synchronized. During the 48 hours before the ceasefire went into effect, Israel sent ground troops into southern Lebanon to seize territory to create the perception of military victory. This unsynchronized IDF "land grab" did little to convince the Lebanese and Hezbollah that the IAF air strikes were successful. Finally, the Israeli army's unclear results may have served to embolden Hezbollah and its supporters in Lebanon.

2. Air and Sea Blockade. Israel simultaneously imposed an air and sea blockade as part of major combat operations on 13 July 2006. The purpose of the dual-pronged blockade was to extend major combat operations from not only targeting bridges and limited road networks between Lebanon and Syria, but also to interdict the Hezbollah LOCs, including sea and air resupply from Syria and Iran.

The air and sea blockades were imposed in a timely manner, but the Hezbollah's stockpiles of weapons, ammunition and supplies were already in Lebanon. Israeli intelligence sources did not claim to have an accurate inventory of the prewar and postwar Hezbollah weapon caches but they estimated 30 Iranian transport aircraft loaded with ammunition and weapons landed at Damascus International Airport and two other military bases outside of the Syrian capital. The cargo included not only small arms but also sophisticated AT-3 anti-tank missiles, short-range surface-to-air missiles, long-range Katyusha rockets and high-explosive anti-tank mines. All these weapons subsequently were transferred to Hezbollah forces in southern Lebanon.[23]

The Israelis closed the ports and established a no-fly zone without major incident. The blockade should have been extended to include closing borders to interdict LOCs. The IDF's and southern Lebanese army's later attempts to secure the porous borders between Syria and Lebanon proved ineffective. It is estimated that as many as 60 crossing sites exist along the Syrian border, requiring tremendous resources to prevent the flow of supplies from Syria to Hezbollah.[24]

In the end, Hezbollah was able to stockpile enough weapons and ammuni-

Israeli artillery fires during conflict of 2006. The Israeli-Hezbollah conflict has many examples of an effects-based approach (EBA) in joint operations in fourth generation warfare. (Photo courtesy IDF)

Israeli artillery fires at Hezbollah positions to end the threat of their launch capabilities south of the Litani River on 10 August 2006. (Photo by Dan Bronfeld, IDF Spokesperson)

tion to fight without being resupplied for months. This was evident as Hezbollah was able to fire short- and long-range Katyusha rockets through the final days of the conflict.

A secondary effect of the air and sea blockade was to undermine the Lebanese economy with the Lebanese government feeling the weight of the blockade. Although this did not compel the Lebanese government to act to disarm Hezbollah, it did play a role in the Lebanese government's accepting a more robust UN force.

Yet, Hezbollah's will to fight appears undiminished.

3. Strategic Communications Campaign. The roots of the Arab world's anti-Israeli sentiments lie in several areas and were captured by Pulitzer Prize winning author Thomas L. Friedman during a CNN interview when he identified "three rivers of rage." The first of these rivers is tied to American support of Israel and American efforts to keep Arab dictators in power. The second is the poverty of dignity related to the decline of the Islamic empire. The third is the corrupt and repressive regimes currently in power in the Middle East.[25] Indeed, a large part of the international community views Israel as the aggressor in the ongoing Israeli-Hezbollah conflict.

The Israeli-Hezbollah conflict negatively impacts regional public opinion in the protracted Hamas-led Palestinian conflict against Israel and is viewed by most observers as a precursor to a potential strike led by the US on Iran. This is the uphill battle any Israeli strategic communications plan must address to achieve legitimacy in the international community. The near target in the IO and psychological campaign is Lebanon, which is even more entrenched in the belief that Israel must be destroyed than most in the region—less the Palestinians, Syrians and Iranians.

At first glance, it appears that Israel has all the advantages to launch a comprehensive strategic communications plan to avoid the occupation of Lebanon. It is capable of harnessing its vast technological telecommunications infrastructure to synchronize its public affairs, media and IO and psychological operations (PSYOPS) to reveal how a Lebanese uprising and the disarming of Hezbollah would be potentially advantageous to the Lebanese populace. But the fact is most Lebanese consider Hezbollah's members as citizens of Lebanon. In contrast, Israel has been successful in influencing and appealing to the international communities.

Israel targeted three audiences in the recent conflict: its own citizens, the enemy and anyone who may be neutral. The themes and messages are to portray Israel as the victim in the conflict and to win hearts and minds.

The Israeli air strikes were meant to sway neutral Lebanese citizens to recognize the inherent weakness of Hezbollah and how quickly it would crumble under devastating precision bombing. Yet, this strategy, to include bombing Hezbollah multi-media stations, was not effective because on the final day of the conflict Hezbollah was able to broadcast its message to the Lebanese people. Moreover, the Israeli government and people, along with the Lebanese people, favored an Israeli withdrawal from Lebanon.[26] This aggressive strategy did not match the theme of portraying Israel as the victim.

Hezbollah was working a two-pronged strategy of its own that included guerilla warfare and PSYOPS aimed at the same target audiences Israel was attempting to influence. Hezbollah, through guerilla tactics, powerful ideology and strategic communications, was able to unite Lebanese Christians, Sunnis and Druze populations against Israel and achieve their objectives.

4. Diplomacy. The key to a lasting cease-fire and diplomatic solution rests with the UN. The Israelis have the unwavering support of the US and majority of the western nations who view Hezbollah as the aggressor in the conflict.

Although Hezbollah is a non-state actor, it has several powerful allies in the region and international community. The Syrians and Iranians appear to be Hezbollah's most vocal and powerful allies. The French appear to be taking a questionable stance by condemning both Israel for responding disproportionately and Hezbollah for continuing to provoke Israel. However, like other countries, the French desire peace in the region to further stability.

It appears Hezbollah may have won the battle, but Israel won the war. The Israeli EBA campaign into Lebanon against Hezbollah may have been disjointed in synchronizing the four LOOs, but diplomacy largely seems to have yielded the end state the Israelis desired.

The Israeli air and sea blockade was lifted on 8 September 2006 in light of UN Secretary-General Kofi Annan's announcing the deployment of a UN naval task force to help the Lebanese navy secure their maritime borders.[27] Israel achieved its diplomatic objective to end the threat to Israeli cities and reached the major aspects of its desired end state. The recent UN Security Council Resolution 1701 required Lebanese troops and the UN Interim Force in Lebanon to facilitate an Israeli withdrawal from southern Lebanon.

Lessons Learned for the Joint Force Commander. There are advantages and disadvantages to adhering to EBA in fourth generation warfare.

The advantages of adhering to EBA in warfare is in its inherent ability to synchronize all elements of national power across the adversary's PMESII systems using the full spectrum of operations to reach the desired end state. The Israelis

were not able to synchronize the four LOOs and were hindered by a flawed and antiquated mental model of a dominant "Kosovo-esque" air campaign. But the Israeli's holistic adherence to the four LOOs, specifically the communication and diplomacy LOOs, yielded a favorable outcome.

The greatest advantage to EBA is that there is no single point of failure. Effects are designed as a wide-ranging approach that synchronizes complex and adaptive systems across flexible LOOs chosen by the commander to bring all the elements of national power to bear on a single operation or campaign to achieve a desired long-term end state.

The disadvantages to adhering to EBA are that there is a tendency to rely too heavily on the *science* of the process. The science merely links nodes together based on a system's perspective derived from regressive analysis of the operational design.

The joint force commander's artful application is the key to success. The commander constantly must assess the campaign execution using MOPs and MOEs and adjust it based on the effects he is achieving as they relate to the objective and desired end state. The joint force commander must not get lost in the "pseudo-science" of EBA and attempt to supplant art with science to link the complex interactive systems of the PMESII construct to focus his effects. The joint force commander must focus broadly toward achieving his end state.

The holistic application of EBA gives the joint force commander the ability to work sequentially along flexible LOOs or simultaneously, as required, to identify the centers of gravity, focus on the objectives and achieve the desired end state—as is apparent in the Israeli-Hezbollah conflict.

The ambiguity of fourth generation warfare is the realm in which the EBA construct thrives; it is imperative that all elements of national power are brought to bear to realize the commanders' aims.

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Endnotes:

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Observer/controller SFC Matthew Sarver, center, observes gunner SPC Jose Chaierz and team chief SGT Jermaine Foxx, all with 3rd Battalion, 4th Air Defense Artillery (ADA), 108th ADA Brigade, out of Fort Bragg, North Carolina, as they fire a Stinger missile using the Manportable Air Defense System (MANPADS) during a live-fire exercise at McGregor Range, New Mexico, on 9 September. BG Robert H. Woods, Jr., far left, Commanding General of the 32nd Army Air and Missile Defense Command, and CPT Aaron D. Felter, E Battery Commander, also observe the exercise. (Photo by SGT Wilson Rivera, 5035th Garrison Support Unit, Fort Bliss, Texas)

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